MODERN MEDICINE

The Journal of Diagnosis and Treatment

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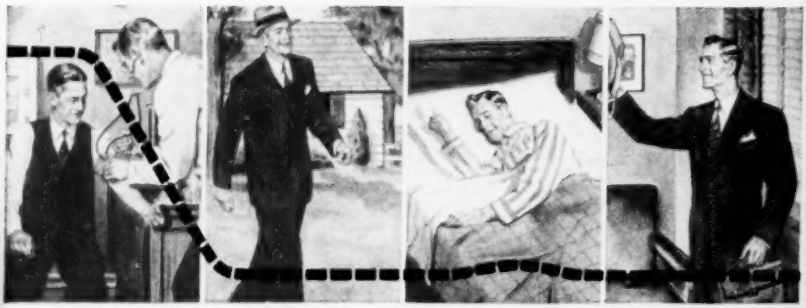

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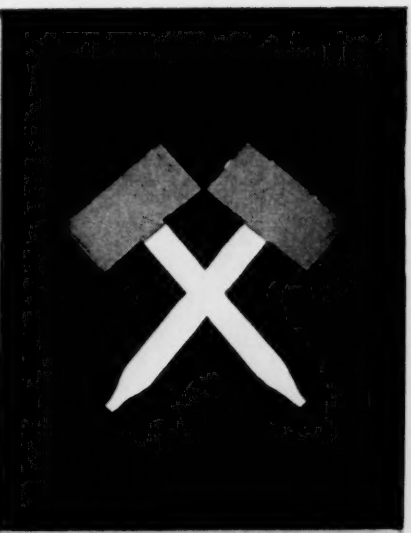

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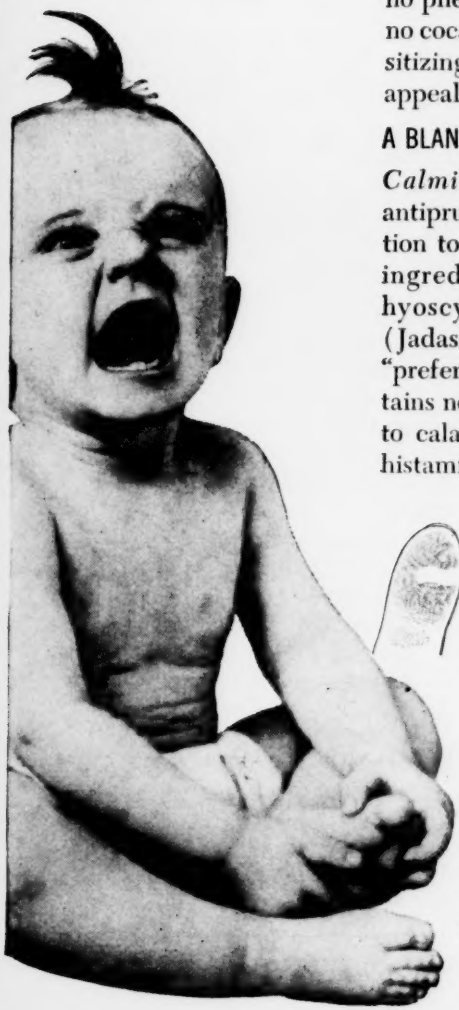

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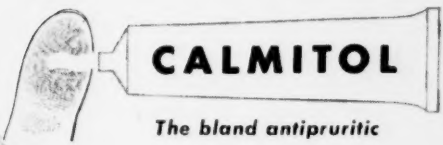

The bland antipruritic

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3. Underwood, G. B., Gaul, L. E., Collins, E., and Mosby, M.: J.A.M.A. 130:249, 1946.

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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(Equiv. to approx. 7 mg. calcium pantothenate)	
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MAY WE SEND YOU A SAMPLE?

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

TABLE OF CONTENTS

for
September 15
1952

Modern Medicine
Vol. 20, No. 18

THE MAN ON THE COVER is Dr. Edgar J. Poth of Galveston, Professor of Surgery and Director of the Surgical Research Laboratory at the University of Texas Medical Branch. Dr. Poth is a fellow of the American College of Surgeons and a member of the Southern Medical Association, Society for Experimental Biology and Medicine, and the Society for University Surgeons. The review on page 114, "Modern Concepts of Intestinal Antisepsis," is based on an article by Dr. Poth which appeared originally in the *American Surgeon*.

Contents for September 15 1952

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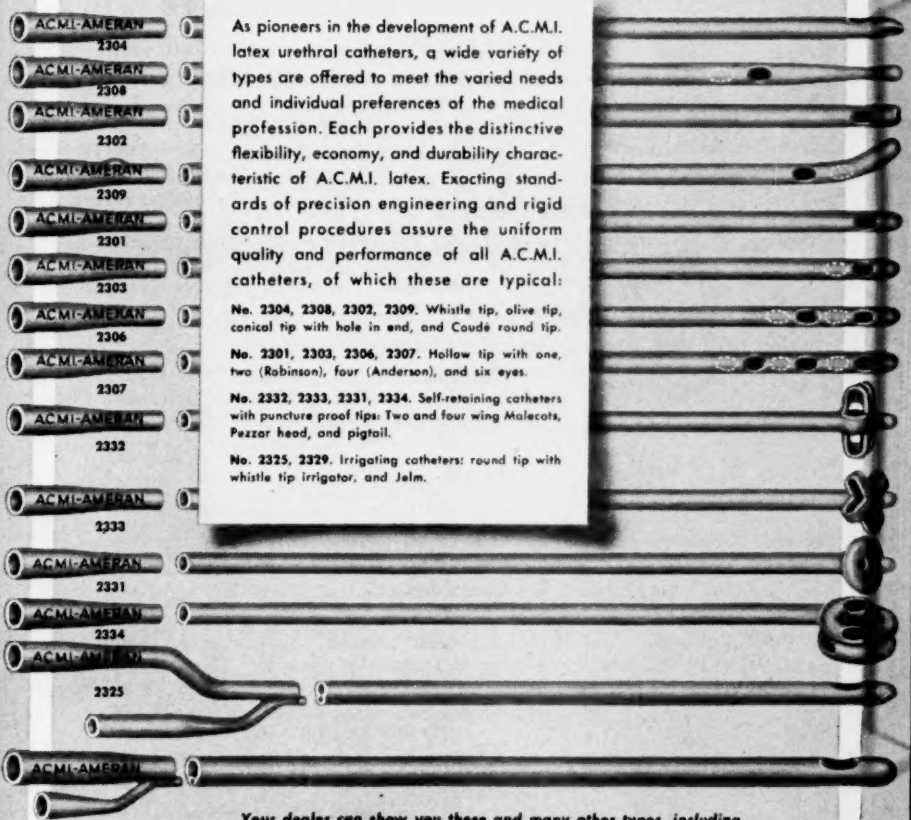
For unsurpassed quality . . .

LATEX URETHRAL CATHETERS

by A.C.M.I.—to meet varied requirements



As pioneers in the development of A.C.M.I. latex urethral catheters, a wide variety of types are offered to meet the varied needs and individual preferences of the medical profession. Each provides the distinctive flexibility, economy, and durability characteristic of A.C.M.I. latex. Exacting standards of precision engineering and rigid control procedures assure the uniform quality and performance of all A.C.M.I. catheters, of which these are typical:

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Your dealer can show you these and many other types, including self-retaining inflatable catheters and hemostatic bags.

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Contents for September 15 1952

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DENCOTAR OINTMENT Sulphurated... contains specially processed crude coal tar, precipitated sulphur, and menthol in non-greasy cosmetic base containing starch. The base permits absorption of the active ingredients well beyond that effected by ordinary bases and therefore minimum amounts of the processed crude coal tar are required to produce maximum therapeutic effects.

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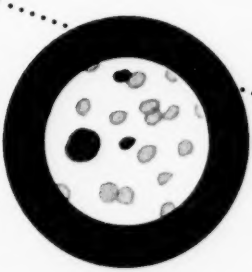
(Continued on page 23)

Intrinsic factor



. . . essential for effective oral B_{12} therapy

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in anemia . . . a fresh

The poor absorption and utilization of oral B_{12} have posed a difficult problem since large oral doses (as high as 100 mcg.) have been necessary for even suboptimal response.[1] The simultaneous use of desiccated duodenum, on the other hand, supplies intrinsic-factor activity to potentiate the effect of oral B_{12} to such a degree that "as little as 5 mcg. daily of orally given B_{12} has distinct antipernicious anemia activity."[2]

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References: (1) Meyer, L. M., et al.: Am. J. Clin. Path. 20: 454-457, 1950; (2) Reisner, E. H., and Weiner, L.: New England J. Med. 247: 15-17, 1952; (3) Hall, B. E.: Brit. Med. J. 2: 585-589, 1950; (4) Bethell, F. H.: Univ. Hosp. Bull., Ann Arbor 15: 49, 1949; (5) Bethell, F. H., et al.: Ann. Int. Med. 35: 518-528, 1951; (6) Spies, T. D.: J.A.M.A. 145: 66-71, 1951; (7) May, C. D.: Am. J. Dis. Child. 80: 2, 1950; (8) Luhley, A. L., and Wheeler, W. E.: Health Center J. (Ohio St. Univ.) 3: 1, 1949; (9) Reisner, E. H., and Weiner, L.: Bull. New York Acad. Med. 27: 391, 1951.

ponse and a vigorous improvement

The complete hemopoietic factors in Armatinic Activated and in Armatinic Special Capsulettes promote optimal anti-anemia responses in the treatment of microcytic anemia and macrocytic anemias of nutritional origin, pregnancy and sprue. Armatinic Activated may be used in either macrocytic or microcytic anemia, whereas Armatinic Special fulfills a unique requirement (for the macrocytic anemia patient) in supplying the most potent activated hemopoietic factors *without iron.*

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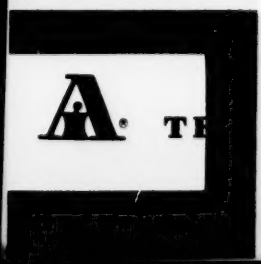
200 mg.	Ferrous Sulfate Exsiccated	no iron salt
10 mcg.	Crystamin (B_{12})—The Armour Laboratories Brand of Crystalline B_{12}	10 mcg.
350 mg.	Liver Fraction II with Desiccated Duodenum	350 mg.
1 mg.	Folic Acid	1 mg.
50 mg.	Ascorbic Acid (C)	50 mg.



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PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

Contents for September 15 1952

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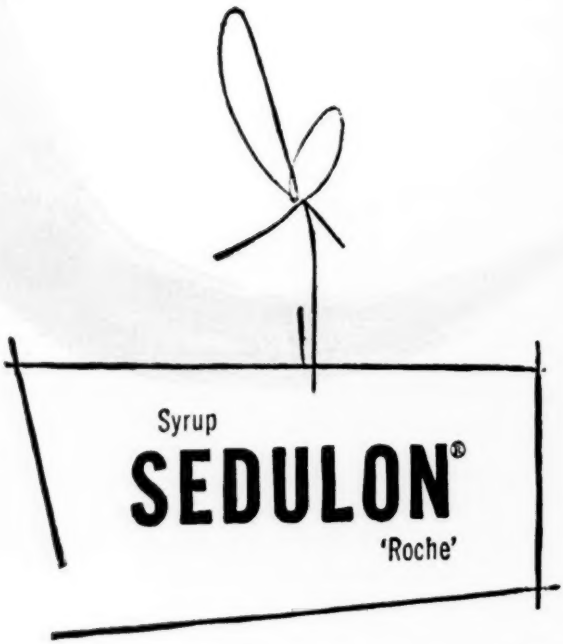

non-narcotic—in place of codeine

"but Doctor, can't you make them eat?"

Trophite* to increase appetite

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LETTER FROM THE EDITOR

Dear Reader:

To deliver your copy of *Modern Medicine* to you twice each month requires the services of many men and women of widely different skills and talents.

For instance, to produce one *Modern Medicine* report involves the talents, judgment, wisdom, and skills of a dozen persons in our editorial department. Routinely these twelve individuals have more than three dozen specific operations for which they are responsible.

Half of these have to do with the exercise of critical judgment and the actual writing and editing. The rest are detailed checks for accuracy. When the report is published in *Modern Medicine* we have done everything we can do to make sure that it is an accurate representation, not only in matters of fact but also in spirit and tone, of the original article upon which the report is based.

This process is repeated ad infinitum for every item that is published in *Modern Medicine*. This makes the editorial costs run high, but costs are a secondary consideration where providing a reliable service to the reader is concerned. For reliability is the *sine qua non* of our editorial policy. It is the foundation upon which all else is built.

There may be differences of opinion concerning the merits of some procedure that is described, but there is no room for doubt about the reliability of the report.

Walter C. Alvarez

EDITOR-IN-CHIEF

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Verstehen Sie?

TO THE EDITORS: I always read with interest the informative articles in *Modern Medicine*. Dr. Alvarez' editorial was followed by a note headed "Comminuted Communication" which you said would be even more readable if it were in German (July 1, 1952, p. 58). For the fun of it I translated it into German. Here it is.

Dieser Verfasser ist abgeneigt zu verleugnen, das er nicht von der Notwendigkeit ueberzeugt sei das geringe Auftreten negativer Effekte als nicht unantastbaren Beweis fuer die Widerlegung der Theorie anzunehmen.

Strangely enough this actually seems more readable to me!

OTTO GLASSER, PH.D.

Cleveland

"My doctor says it's the night work that's getting me down."

Stimulus to Others

TO THE EDITORS: I was very pleased that *Modern Medicine* published a résumé of my work on the chorda tympani nerve with relation to Ménière's disease (Apr. 1, 1952, p. 111). I am certain that this will stimulate others to investigate and criticize this new concept.

I was particularly pleased with the comments which you invited by such able men as Campbell, DeWeese, Altman, Shambaugh, and Lindsay (July 1, 1952, p. 114). I hope that these careful observers will try this procedure in order to test it.

SAMUEL ROSEN, M.D.

New York City

Good Suggestions

TO THE EDITORS: I want to express my interest in your editorial, "Saving Time" (*Modern Medicine*, June 15, 1952, p. 71). It contained a lot of good suggestions.

M. A. STROUP, JR., M.D.

Gastonia, N. C.

in ARTHRITIS
and allied disorders

BUTAZOLIDIN

(brand of phenylbutazone)

New...
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Synthetic

for relief of pain plus improvement of function

Now available on prescription, BUTAZOLIDIN is a new and potent agent that has yielded outstandingly favorable results in arthritis and other painful musculoskeletal disorders.

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To insure optimal results and to avoid untoward reactions, physicians are urged to send for the BUTAZOLIDIN brochure or to read the package circular carefully before prescribing.

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Leukemia Remissions

TO THE EDITORS: During 1950 there was a rash of editorials based on reports of successful management of acute leukemia by folic acid antagonist (antifol) therapy. I felt duty bound to dispute this editorial tenor. My own observations had indicated that antifol therapy materially shortened life and enhanced the discomfort of the acute leukemic patient.

In a letter in *Modern Medicine* (July 15, 1950, p. 22), I summarized my brief against antifol therapy. At the same time, it was mentioned that a crude APF ("animal protein factor") seemed to do what antifol was supposed to do but, in my experience, did not do: raise the remission rate, survival time, and clinical status of leukemic patients.

Following the publication of this letter, I carefully reviewed the case histories of 40 acute leukemic patients who were supposed to have had clinical or hematologic remissions or both induced by antifol administration. My conclusion was that in every instance the remission was more than coincidental to the

"I wake up when I'm asleep and doze when I'm awake."

simultaneous administration of one of the streptomyces-derived antibiotics: streptomycin, aureomycin, chloramphenicol, or terramycin.

It so happened that the APF I had been using as a nutritional supplement in acute leukemic patients was a streptomycin fermentation residue with a demonstrable antibiotic content. This material, with which I secured unequivocal remission, turns out to have a rather high content of folinic acid ("citrovorum factor") which has been deliberately used to neutralize the effects of antifols. In other words, the feeding of a demonstrated pharmacodynamic antagonist to the antifols will permit remission of acute leukemia.

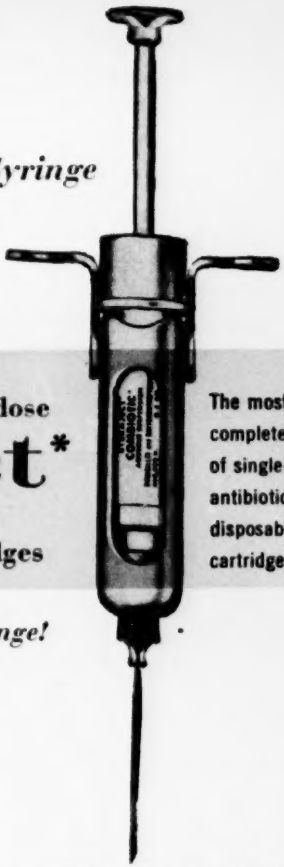
Even more startling is the fact that most patients in whom remission was supposed to be due to antifols were simultaneously receiving prophylactic mycin antibiotics. It seems now that aureomycin definitely abolishes the toxic effect of antifol and since this toxic effect was that relied upon for myelosuppression—and hence for antifol therapeutic action—it appears that

(Continued on page 36)

"My rheumatism is coming along fine. I'm the one who's getting the worst of it."

NEW *Pfizer Steraject Syringe*

holds 2 cartridge sizes



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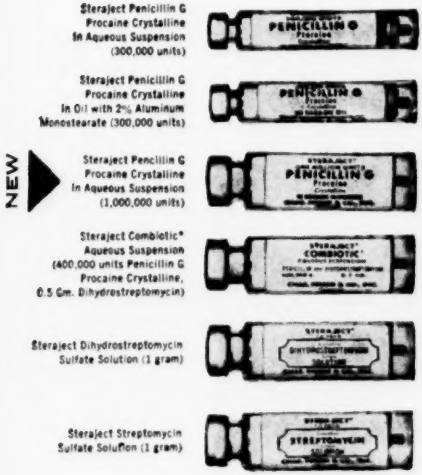

two cartridge sizes permit *full standard* antibiotic dosage

cartridges individually labeled

ready for immediate use

no reconstitution

for full details, ask your Pfizer Professional Service Representative

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- ***Provides buffered penicillin G potassium, the oral efficacy of which is long established.***
- ***Presents Sulfacetimide as a component of all penicillin-triple sulfonamide combinations.***

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(500,000 units of penicillin per teaspoonful)*

Highest potency liquid oral penicillin available. Most economical liquid oral penicillin available. Fully effective on convenient 8 to 12 hour dosage schedule.

New DRAMCILLIN-250 with Triple Sulfonamides . . . *and* *New* DRAMCILLIN-250 TABLETS with Triple Sulfonamides

(250,000 units of penicillin and 0.5 Gm. mixed sulfonamides† per teaspoonful or tablet)*

Effective two-fold attack against wider range of microorganisms
Minimizes possibility of development of drug-resistant organisms

DRAMCILLIN-250 (250,000 units* per teaspoonful).

DRAMCILLIN — (100,000 units* per teaspoonful).

DRAMCILLIN with Triple Sulfonamides — (100,000 units of penicillin* and 0.5 Gm. of triple sulfonamides† per teaspoonful).

Also: **DROPCILLIN** — (50,000 units* per dropperful).

*buffered crystalline penicillin G potassium
†0.167 Gm. each of sulfadiazine, sulfamerazine and *sulfacetimide* (the sulfa of choice as the third component)

WHITE LABORATORIES, INC., KENILWORTH, N. J.

the antifol might have just as well been dispensed with. It appears that aureomycin administration will enhance the synthesis of folinic acid with antifol inactivation. It is now known that an identical intestinal tract neutralization of antifols occurs with the feeding of terramycin, streptomycin, or chloramphenicol; with dietary induction of a gram-positive, nonsporulating aerobic flora; or upon the administration of cortisone, isonicotinic hydrazide, para-aminosalicylic acid, or Fowler's solution.

By continuous administration of *anti*antifols such as APF, or its constituent antibiotic, patients in my own observational series continue to outlive and outdo those with acute leukemia subjected to myelosuppressive treatment. That acute leukemia remains the major hematologic problem must still be admitted. That the antifol approach will have led, except by indirection, to a solution of the acute leukemia problem must now be emphatically denied.

ROBERT D. BARNARD, M.D.
Laurelton, L. I.

"Hurry, doc. It's any minute, now."

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IMPROVED
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MONILIASIS
MIXED INFECTIONS

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TRICHOMONICIDAL
It Kills Trichomonas

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It Kills Fungi
Especially monilia

BACTERICIDAL
It Kills Bacteria
Especially certain gram-positive and gram-negative cocci and bacilli

DEODORANT
It Kills Odors—
Especially objectionable and unpleasant odors.

Because . . .
AVC Improved is indicated in a wide range of infections of the exocervix, vagina and vulva:

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- ***Specific and non-specific bacterial infections***
- ***Mixed infections.***

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Formula: **9-Aminoacridine Hydrochloride 0.2%, Sulfanilamide 15%, Allantoin 2%, specially prepared buffered water-miscible base.**

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Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: What institutions offer permanent care and a program of education for a child with double hemiparesis, choreo-athetosis, and probably functioning intellect?

M.D., Texas

ANSWER: Lists of special schools and institutions for the care of handicapped children are available from the National Society for Crippled Children, 11 South La Salle Ave., Chicago, and from the United Cerebral Palsy Association, Inc., 50 West 57th St., New York City.

QUESTION: What is the pathologic reason and what treatment can you suggest for subjective sensations of heat in a man 82 years of age?

M.D., New York

ANSWER: *By Consultant in Internal Medicine.* The control of body temperature is a function of cerebral centers located in the hypothalamus. In animals, stimulation of areas in the anterior portion of the hypothalamus causes activation of mechanisms of heat loss; stimulation of the caudal part activates mechanisms for warming the body and conserving heat.

Clinical experience indicates that the thermoregulatory centers have similar locations in human beings. Lesions which damage the anterior portion of the hypothalamus may be associated with high levels of body temperature, while lesions in the posterior part may cause hypothermia. Probably some degenerative change of this type has occurred in this case and may account for the symptoms. Treatment other than general and symptomatic would be of no avail.

QUESTION: What can be done to relieve a 62-year-old man who has suffered for about a year from excessive flatulence with frequent emission of flatus? The patient is a light eater and is in good condition except for cardiac insufficiency upon exertion. He had an attack of cardiac decompensation about two years ago.

M.D., New York

ANSWER: *By Consultant in Gastroenterology.* The flatulence may be a result of the cardiac condition. With impaired circulation of the gastrointestinal tract, gaseous exchange is disturbed. Some of the gas may be air swallowed during spells of dyspnea, particularly at night. Improving the cardiac status is the basic therapeutic procedure to eliminate the flatulence. Diet regulation and attention to bowel function would be helpful. Oxygen inhalations may also be tried.

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QUESTION: Will compression gangrene occur from a tight-fitting cast?
M.D., Indiana

ANSWER: *By Consultant in Orthopedics.* One type of gangrene may result from local circulatory traumatic spasm which inhibits ability to carry off the degenerative products of injury. Sometimes, in this type of gangrene, no pressure from a cast is manifest. Conditions such as diabetes and circulatory disease of the vessels of the limb may contribute to a compression gangrene. Often insufficient emphasis is put on [1] protecting bony prominences, and [2] applying a cast with bridges across bony prominences or even across soft tissue, particularly in the region of the tendo achillis. Sometimes a cast is pulled across the tendo achillis strangling the blood supply.

CREDITS FOR ILLUSTRATIONS

Credits for the illustrations appearing with the article "Soft Tissue Injuries of Lower Limbs" by Thomas B. Quigley, M.D., published in *Modern Medicine*, Sept. 1, 1952 were inadvertently omitted.

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A NEO-PENIL* CASE HISTORY

(For more information about 'Neo-Penil', see page 152)

Bronchiectasis: Preparation for surgery

Patient: Mr. A.C., age 52, admitted to the hospital November 10. Eleven years' history of bronchitis. In the last 5-6 years he had periodic attacks of severe cough, producing large amounts of purulent, fetid sputum. He had "caught a bad cold" in September and was feeling very poorly, with severe cough, copious expectoration and fever.

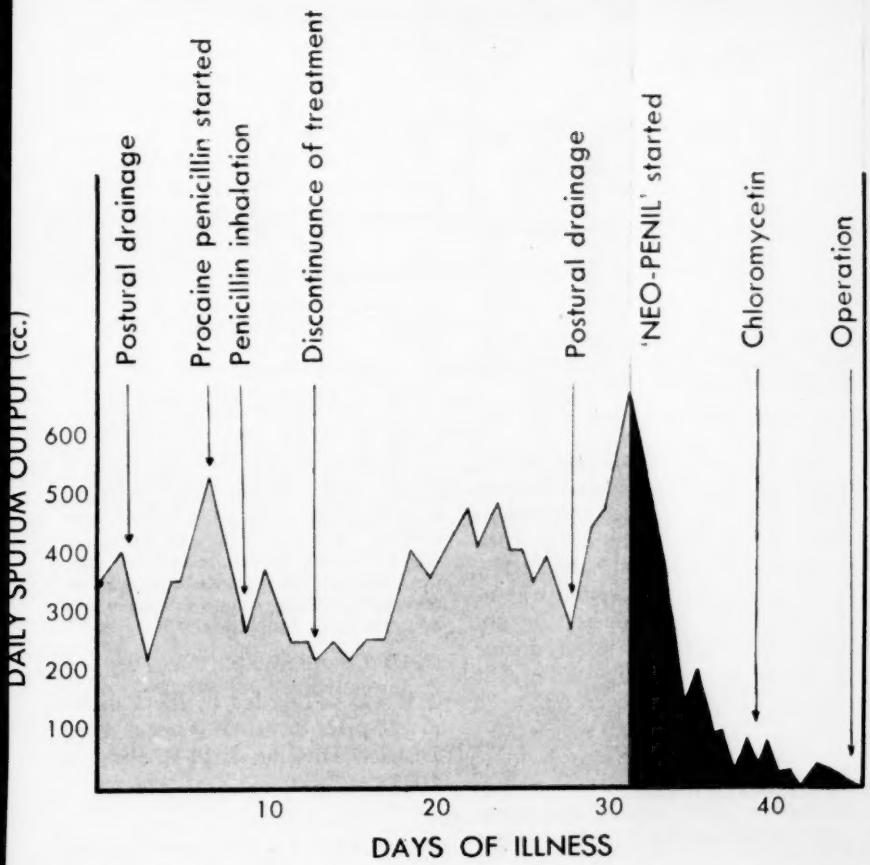
First course of treatment: After sputum cultures were obtained, the patient was treated with procaine penicillin, intramuscularly, 150,000 units daily for 5 days and streptomycin 0.5 Gm. t.i.d. for 4 days. In addition, he was given penicillin inhalations for 6 days. Postural drainage was employed throughout the treatment.

Response: The amount of expectorate decreased but slightly.

On November 25, the patient was transferred to the Department of Thoracic Surgery of a larger hospital, for operation. Bronchoscopic examination revealed marked bronchiectasis in all segments of the left lower lobe. The upper lobe, including the lingula, showed no abnormality. The sputum volume was now 600 cc. per day.

Second course of treatment: In the hope of reducing the sputum volume before operation, the patient was given 'Neo-Penil', intramuscularly, 1 million units the first day, 1 million units b.i.d. the second day, and 1 million units t.i.d. thereafter. Postural drainage was reinstituted.

Response: After 6 days, sputum volume was reduced from 600 cc. to 50 cc. per day. At this time sputum culture revealed penicillin-resistant bacteria and chloromycetin was given, 0.5 Gm. every 6 hours for 5 days. The sputum volume was further reduced, and it was felt safe to operate.



'Neo-Penil' is a new, long-acting derivative of penicillin, which concentrates in the lung and sputum (see page 152). It is available at retail pharmacies in single-dose, silicone-treated vials of 500,000 units.

Smith, Kline & French Laboratories, Philadelphia

★T.M. Reg. U.S. Pat. Off. for penethamate hydriodide, S.K.F. (penicillin G diethylaminoethyl ester hydriodide) Patent Applied For

FULL INFORMATION ACCOMPANIES EACH 'NEO-PENIL' VIAL.

Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: Was a New York charitable hospital liable to a patient for alleged malpractice of an intern?

COURT'S ANSWER: No.

The New York Supreme Court, Appellate Division, Second Department, in reaching this conclusion, cited a decision of the New York Court of Appeals (100 N.E. 2d 51) to the effect that a hospital, whether charitable or private, is not liable for negligence of a doctor or nurse in medically caring for patients (110 N. Y. S. 2d 583).

PROBLEM: A patient slipped and fell upon a highly polished floor in the offices of defendants, a medical group. The dangerous condition had continued for at least six weeks. Could defendants avoid liability for the patient's injuries on the ground that they had engaged janitorial services on a lump-sum monthly basis and that the janitor caused the condition of the floor?

COURT'S ANSWER: No.

Although there was some dispute in the evidence as to when the floor had been last waxed, the California District Court of Appeal, of the Fourth District, said there was ample evidence to sustain the jury's implied finding that a dangerous condition had existed long enough that defendants were bound to be aware of it, and so were negligent in permitting the condition to continue (241 Pac. 2d 1013).

PROBLEM: At trial of a suit for damages for alleged wrongful removal of part of plaintiff patient's fallopian tubes in an appendectomy, there was no contradiction of the defendant doctor's testimony that although there was a preoperative diagnosis of appendicitis-salpingitis, the appendectomy disclosed a pyosalpinx, rendering it necessary to remove the diseased section of the fallopian tubes. Furthermore, plaintiff had signed written consent to performance of any operation which "during the contemplated services" should "be deemed advisable or necessary." Was a jury's finding in the doctor's favor conclusive?

COURT'S ANSWER: Yes.

It was so decided by the California District Court of Appeal, First District, Division 2 (241 Pac. 2d 1028).

PROBLEM: For $300 a year a doctor agreed with a county to "perform the duties of a physician for paupers" at a poorhouse, furnishing necessary medicines. Did that bind the doctor to treat an infant inmate's talipes varus?

COURT'S ANSWER: That question could not be answered without a showing as to the nature of treatment needed.

In this Iowa case, in which the doctor sued for the agreed pay and the county counterclaimed for $75 because the doctor refused to treat

the infant's condition, asserted to be a "curable infirmity," the trial judge decided that the doctor was not bound to perform *surgery* under the contract.

The Iowa Supreme Court ordered a rehearing of the case for these reasons: As a general proposition, the terms "duties of physician" and "medical treatment" include both medicine and surgery. But a "natural deformity, such as club-foot, hare-lip, cross-eyes and the like may not fall" within the classes of surgery required under such a contract, limited to a year or less. That depends upon the facts of the particular case, as to whether the deformity can be treated advantageously and requires immediate attention. In short, the trial judge erred in not letting a jury decide those questions (28 Iowa Rep. 22).

PROBLEM: New York statutes have provisions for disciplinary proceedings against a doctor who has been convicted in a court "within or without this state of a crime." Two doctors were convicted in a federal court in the District of Columbia for contempt of Congress in refusing to produce before a congressional committee documents germane to an investigation of alleged un-American activities. Did the New York Board of Regents act within their power in determining that the conviction bore such relation to the practice of medicine and moral turpitude as to subject the doctors to discipline?

COURT'S ANSWER: Yes.

The New York Supreme Court, Appellate Division, Third Department, decided: [1] The fact that there was no such crime in New York as contempt of Congress was unimportant. The statute applies when a wrongful act is committed in another jurisdiction although not a crime in New York. [2] The conviction of any crime bears some relation to practice of any profession. As to moral turpitude, the legislature intended that the board exercise discretion, in the light of the fact that "moral turpitude depends upon a point of view and circumstances."

PROBLEM: Written consent by, or on behalf of a patient before an operation is always advisable and important, to guard against disputes as to whether consent was given and, if so, whether it was broad enough to cover surgery afterward claimed to be unauthorized. But is written consent legally necessary, under ordinary circumstances?

COURTS' ANSWERS: No.

The Nebraska Supreme Court observed that generally the patient's consent is necessary, "but consent may be implied from circumstances and an operation may be demanded by an emergency without consent" (225 N.W. 120). The court cited decisions to that effect from Michigan, Minnesota, and Oklahoma.

Often it has been decided that a patient consents to an operation when he voluntarily submits to it, without having been induced to do so by misrepresentations.

An appellate court in California has decided that a surgeon is authorized to operate when the authority is given through a hospital, instead of directly to the doctor (138 Pac. 2d 723).

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- Ivy poisoning
- Sunburn
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SUPPOSITORIES • UNGUENT

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PROBLEM: In a proceeding to fix a doctor's fee for treating 2 children injured in an accident for which defendant was liable [1] could any allowance be made for that part of the treatment —the most important—given at a city hospital in the doctor's capacity as a city employee? [2] In fixing the fee for subsequent treatment in a private capacity, could the financial, economic, and social status of the children be considered?

COURT'S ANSWERS: [1] No. [2] Yes.

On the first point, the New York Supreme Court, Special Term, of Bronx County, noted that the doctor was not entitled to and did not claim a fee for services rendered in the city hospital, because the children were entitled to these services and they were covered by an allowance made to the hospital.

On the second point, the court said that an allowance made for the private service was generous and that, contrary to the doctor's assertion, he was not privileged to "charge these children the same fees he would charge a 'Rockefeller'" (111 N. Y. Supp. 2d 21).

PROBLEM: A hospital and surgical expense policy was limited to "sickness which originates . . . more than fifteen days after the date hereof." When the beneficiary had been previously treated for a diseased uterus and was operated upon more than fifteen days after the policy issued, was she entitled to collect on the policy on a theory that the acute diseased condition which necessitated surgery was distinct sickness from that previously existing?

COURT'S ANSWER: No.

The Louisiana Court of Appeal, First Circuit, also decided that the beneficiary was not entitled to rely upon any assurance given her by the insurer's agent that the policy

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It may be used as the sole medication in non-specific diarrheas. In the more severe dysenteries, it is a valuable adjuvant. Arobon is easily prepared for adults and children by simply mixing it with milk, and for infants by mixing it with skim milk or water and boiling for ½ minute.

1. Smith, A. E., and Fischer, C. C.: J. Pediat. *35*:422 (Oct.) 1949.
2. Kaliski, S. R., and Mitchell, D. D.: Texas State J. Med. *46*:675 (Sept.) 1950.
3. Plowright, T. R.: J. Pediat. *39*:16 (July) 1951.

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A combination of pyrilamine maleate, 2 per cent, and an extract of carefully selected crude coal tar, derived by an exclusive process of fractionation (Tarbonis brand), 5 per cent, in an emulsified hydrophylic base, non-greasy and clean in application.

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The special tar extract in Histar owes its high clinical value to three excellent therapeutic properties: It is decongestant, anti-inflammatory, and potently antipruritic.

In Histar, the two contained therapeutic agents appear to potentiate each other in a synergistic action which may well be termed physiologic.

Physicians are invited to use the coupon for comprehensive literature and samples.

References

1. Walters, J. D., and Gilman, R. L.: A Combination of Tar and Antihistaminic for Local Use, U.S. Armed Forces M.J. 2:187 (Feb.) 1951.
2. Lawless, T. K.: Personal Communication.
3. Kile, R. L.: Personal Communication.
4. Levine, B.: Personal Communication.

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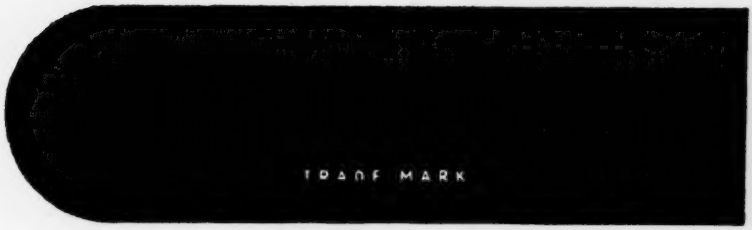

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accorded benefits clearly excluded by the wording of the policy.

The court distinguished two other cases in which courts had decided that similar policies covered diseased conditions that were latent when the policies were issued (58 So. 2d 251).

PROBLEM: Did a statute forbidding a physician to disclose a "confidential communication properly entrusted to him in his professional capacity," without assent of the party entitled to object, apply to information acquired by a doctor in an autopsy?

COURT'S ANSWER: No.

A jury had awarded recovery on an accident policy despite a defense that insured had died from nonaccidental causes. The U. S. Court of Appeals, Eighth Circuit, ordered a new trial because the trial judge had refused to permit Dr. S to testify that death resulted from a brain tumor. The witness, who had neither examined nor treated insured, performed an autopsy at the instance of insured's physician.

The Court of Appeals noted that there was disagreement among appellate courts upon the question whether knowledge acquired by a physician through postmortem examinations is a privileged communication under statutes resembling that of Iowa involved in this case. (Decisions of the appellate courts of Utah, Wisconsin, District of Columbia, and Nebraska were cited as declaring such communications not to be privileged. Contrary decisions in Michigan and Indiana were noted.)

The Court of Appeals reasoned: Death terminates a physician-and-patient relationship. The principal purpose of the statutes is to enable

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COBALT.....0.006 mg.	*PHOSPHORUS 940 mg.	CHOLINE..... 200 mg.	*THIAMINE..... 1.2 mg.
*COPPER..... 0.7 mg.	POTASSIUM. 1300 mg.	FOLIC ACID.....0.05 mg.	*VITAMIN A.....3200 I.U.
FLUORINE.... 3.0 mg.	SODIUM..... 560 mg	*NIACIN..... 6.7 mg.	VITAMIN B_{12}..... 0.005 mg.
*IODINE..... 0.7 mg.	ZINC..... 2.6 mg.	PANTOTHENIC ACID 3.0 mg.	*VITAMIN D..... 420 I.U.
*IRON..... 12 mg.			

*PROTEIN (biologically complete).....	32 Gm.
*CARBOHYDRATE.....	65 Gm.
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*Nutrients for which daily dietary allowances are recommended by the National Research Council.

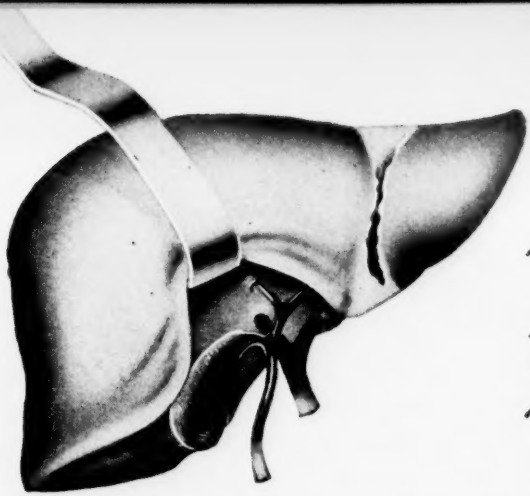
a doctor to secure from a patient such full disclosure of facts as will facilitate proper treatment. It is unlikely that an ill patient would withhold disclosure of facts or forego medical attentions through fear that the doctor may perform an autopsy and disclose those facts. An autopsy is much less apt to follow when there has been medical attendance. So, for more than one reason, facts learned by autopsy are not within the statutory purview (25 Fed. 2d 680).

The reasoning of the Court of Appeals has been followed by the Iowa Supreme Court, which decided that it was error to exclude an autopsy surgeon's testimony in a life insurance case that death was caused by a perforated duodenal ulcer (293 N. W. 464). And the Minnesota Supreme Court has intimated acquiescence in the federal court's views by citing its decision (298 N. W. 45).

PROBLEM: A motorist, injured in a collision, was taken to a doctor for treatment. Later he returned to the doctor with a state trooper to have a blood sample taken, a procedure to which he consented. The sample was taken to a pathologist for analysis of alcoholic content. The motorist was prosecuted for drunken driving. Was the doctor disqualified to testify against the motorist without the latter's consent as to the results of the blood examination, on a theory that the testimony related to information acquired "in attending a patient in a professional capacity"?

COURT'S ANSWER: No.

The Wayne County (N. Y.) court noted that the doctor merely took a specimen. The doctor did not analyze the specimen and therefore could not testify as to the alcoholic content (98 N. Y. Supp. 2d 481).



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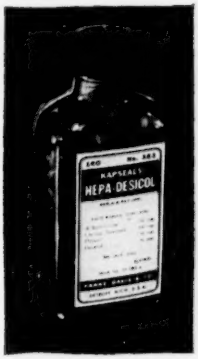

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Washington LETTER

Magnuson Commission Hearings Near Final Phase

AN experiment in medical planning which might easily affect the practice of medicine for many years to come now is hurrying into its final phase. The President's Commission on the Health Needs of the Nation is operating at breakneck speed in an effort to finish its year-long survey by January 1953, the deadline set by President Truman.

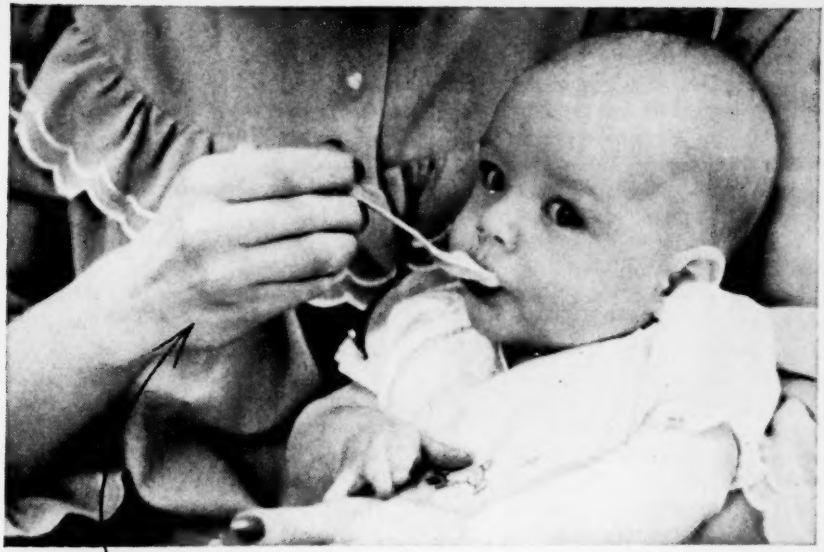
The idea of a one-year survey of health problems was conceived less than a year ago. Director of the operation, Dr. Paul Magnuson, says his first knowledge of the project came when the President called him to the White House and asked him to take over the chairmanship. There are other reports that the idea originated outside the White House, but that its sponsors sold Mr. Truman because they knew a presidential commission was the only vehicle that could have the financing and the prestige to move rapidly.

At any rate, Dr. Magnuson willingly took charge, after receiving Mr. Truman's assurance that he would have complete freedom of operation and that "Ewing [Oscar E., FSA administrator] would be kept out of the picture."

Dr. Magnuson was unquestionably a good choice for the job. In the eyes of the public, and of the medical profession, he was best known at that time as the man who had helped build up the Veterans Administration's medical department to a high level of service, then had engaged VA Administrator Carl Gray in a dead-end fight over what Dr. Magnuson called "bureaucratic control" of veterans' medical care. The medical director was fired outright—thereby establishing him firmly as an enemy of bureaucracy.

"Round up the prettiest nurses. We're being televised."

Regardless of how Dr. Magnuson regarded his assignment, he was to learn—even before the new commission could be called together—that the American Medical



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- Wide choice of baby foods for prescription selectivity—starting cereals, strained and junior fruits, vegetables, soups, meats, desserts.
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Association officially looked upon Mr. Truman and the commission with great suspicion. Out of deference to Dr. Magnuson's long years of loyalty to the medical profession, he was given a clean slate.

Dr. Magnuson, never one to run away from trouble, heatedly defended the commission, its objectives, and its professional and lay members. He said the AMA was being led around by its "hired public relations experts."

Repeatedly AMA officials declared that Dr. Magnuson was the tool of the Democratic administration and that the commission had only one purpose: to pull Mr. Truman out of an election year defense of his politically unpopular plan for national compulsory health insurance.

At first the issue centered around Dr. Gunnar Gundersen, an AMA trustee who refused to serve on the commission after, according to Dr. Magnuson, once having agreed to.

However, as the months went on, a dozen figures important in the medical association came down to Washington to testify on fields in which they are experts. One of them was Dr. Gundersen, who posed pleasantly with the Chairman for photographers, while the two exchanged remarks about their great respect for each other.

But the fire was not out. It swept out of control again at the June

(Continued on page 64)

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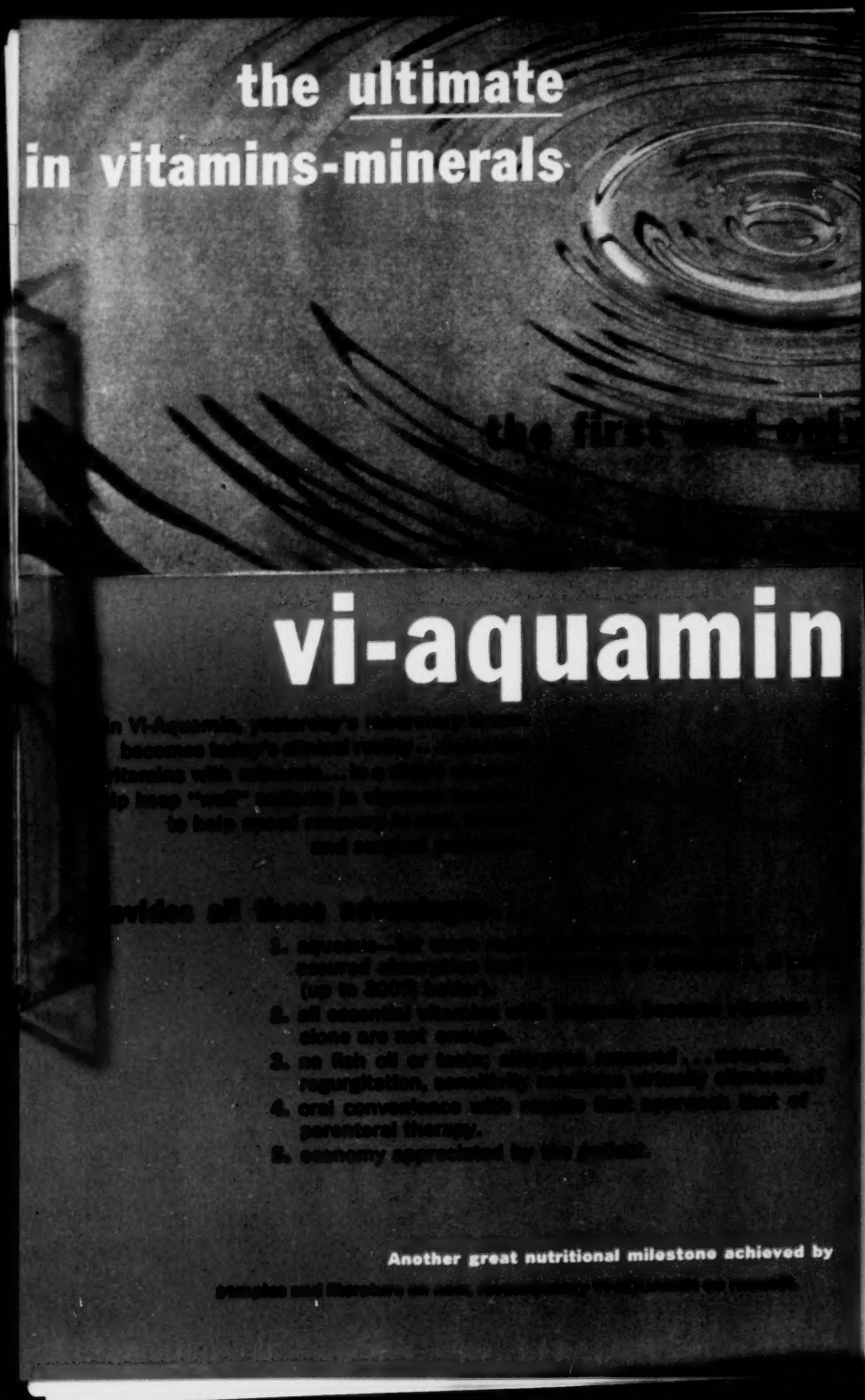
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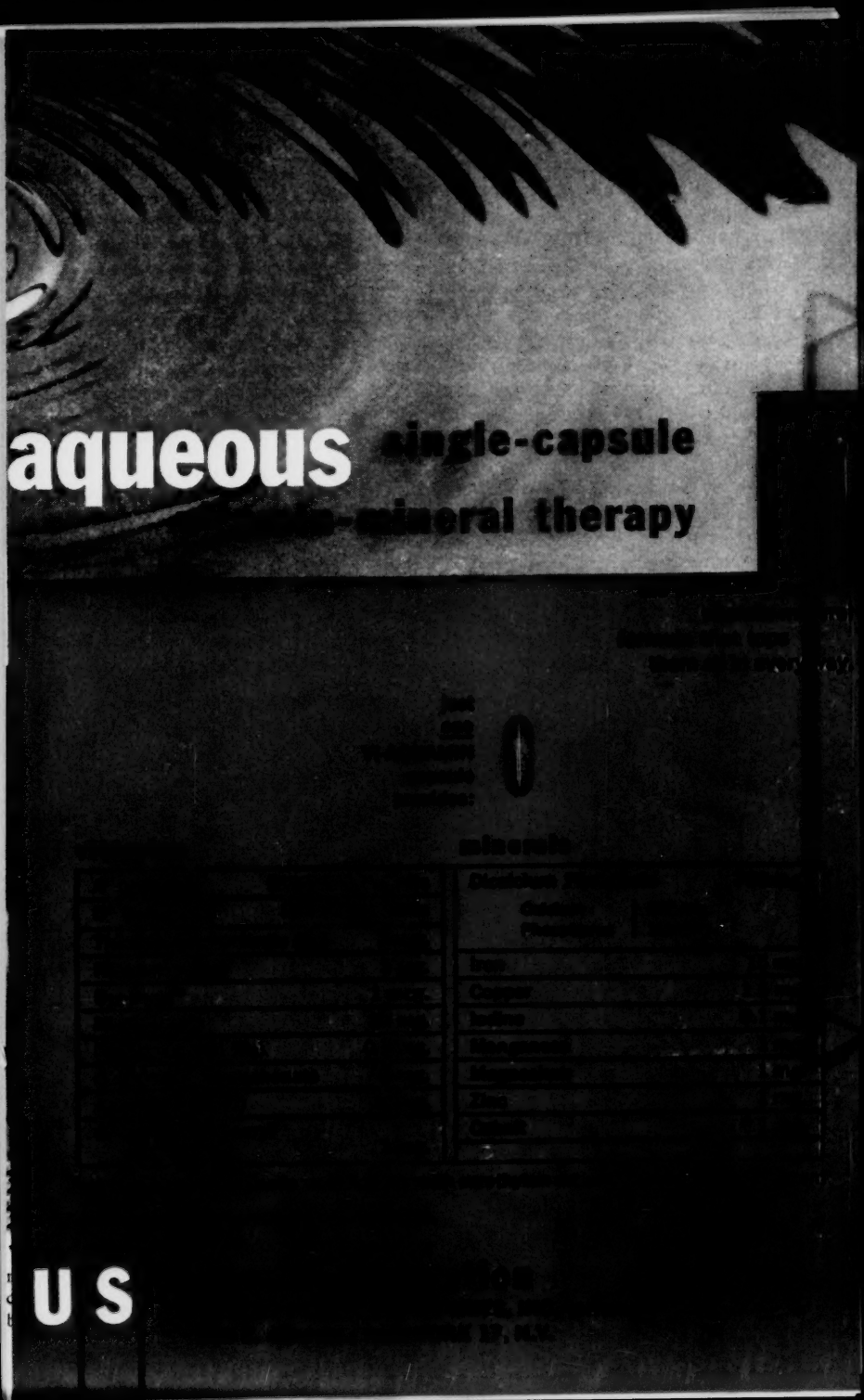
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convention of the AMA. There both Dr. Magnuson and Dr. Russel V. Lee of California, a member of the House of Delegates, defended the commission as factual, unbiased, and nonpolitical.

The result was that an original bitter resolution condemning the commission was watered down before its adoption. Finally the AMA decided that it still suspected Mr. Truman and the commission of playing tricks, but that it wouldn't condemn the final report until it had been studied. And it won't be ready for study until about the first of the year. But the convention was no love feast, and the country was left with the impression that the final report would have to be pretty good or the organized medical profession would have none of it.

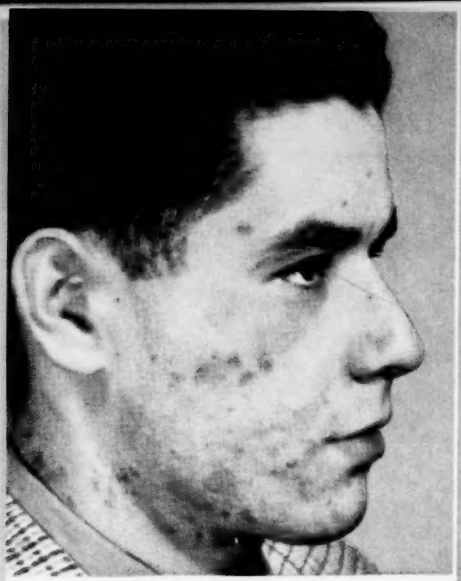
It may be unfortunate, but the bitter political argument is the window through which most of the country has observed the commission. Actually, the commission has been doing a staggering amount of work. Whether the tons of records and months of labor will contribute any new basic information about health problems, or lead to any acceptable solutions, is yet to be seen.

Since spring, when the commission started its hearings and closed panel meetings, more than 300 witnesses have appeared, including doctors, nurses, labor leaders, consumer representatives, and educators. What they have said is running into hundreds of thousands of words on official records.

Currently, the commission is "on

(Continued on page 68)

"They're splitting the cost of the cast."



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for Acne

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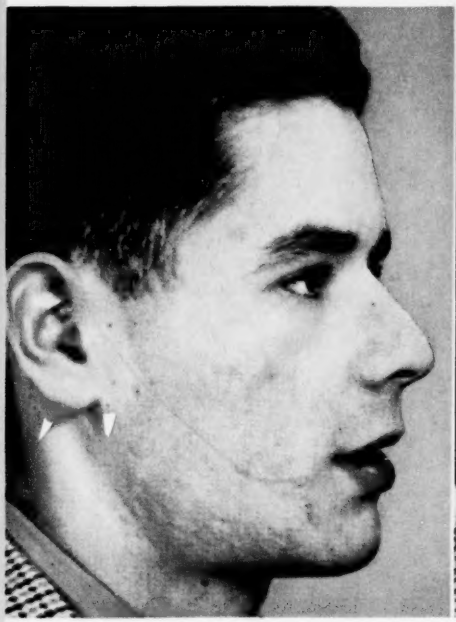
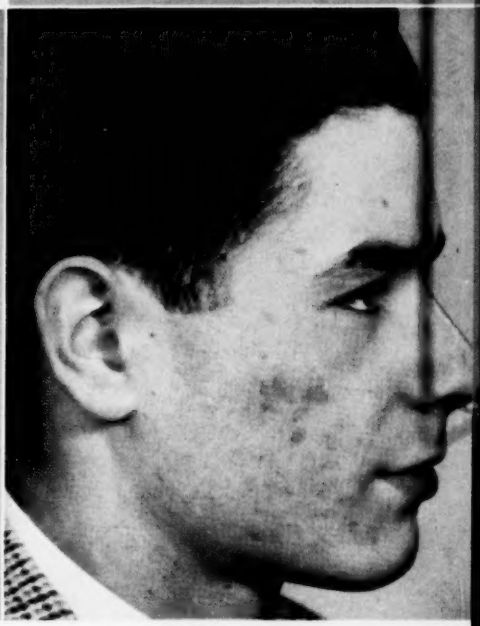


Wearing Acnomel, same day. Lesions now are masked, though flesh-tinted Acnomel (2% resorcinol and 8% sulfur) is virtually invisible. It can be worn night or day without embarrassment.



After Acnomel, 30 days later. Here patient is *not* wearing Acnomel. A few pustules remain, but no new comedones have appeared and irritation has subsided.

she fails to complain

This is the first of a series of Norman Rockwell portraits
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of the distress you can see

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the road." Starting in August, it has been conducting hearings in cities scattered over the country. To date, meetings have taken place in Philadelphia, Dallas, Raleigh, Minneapolis, and St. Louis. Concluding meetings will be held in Cleveland on September 22, in Detroit on September 23, and in San Francisco on September 29.

These gatherings generally follow the pattern set in recent years by barnstorming congressional investigating committees. Commission staff members first go into the community to line up witnesses and facilities. The hearings are presided over by a commission member and usually attended by other commission members. A local leader is the official chairman. There are no ground rules. Any subject related to medical care is considered proper for discussion. Dr. Magnuson made it clear at the outset that he didn't want these meetings restricted to members of the health professions. Professional witnesses are well balanced by lay witnesses, including a number of labor spokesmen.

Early in October, activities switch back to Washington. Here, for three days, the full commission will hear arguments on the most controversial question in the health field —how to pay for medical care. Spokesmen for voluntary health insurance plans will be heard, as will the sponsors of the Truman-Ewing plan for compulsory health insurance. These meetings will be presided over by Walter Reuther, president of United Auto Workers-CIO. For years the CIO has been plugging for national compulsory health insurance, which Mr. Truman calls a democratic way of meeting medical expense but which AMA describes as socialized medicine.

After the final meetings, the commission plans to settle down for two months, digest facts and opinions, and prepare a final report.

Washington Notes

Federal Civil Defense Administration has taken a long time to start accumulating supplies for regional medical stockpiles. By July 15, it had on hand only $1,574,387 in material, equal to 2.75% of the money made available by Congress for such purchases. However, supplies now are arriving at a fairly fast rate. One of the problems has been reluctance of drug and appliance makers to expand production capacity in view of congressional hot-and-cold attitude toward civil defense. Incidentally, the situation has stabilized, at least for the time, in the Federal Civil Defense Administration's medical department. Col. William L. Wilson, on loan from the Army, had decided to give up the medical directorship of CDA in September. Then he was made a brigadier general and induced to stay on for several more months. Eventually, however, he wants to return to the Army.

Dispute between the federal government and pharmaceutical representatives over "sale-by-mail" delayed announcement of the new federal prescription code for five months. Finally, Food and Drug Administration decided to

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*Freed, S. C. and Mixel, M.—in press

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promulgate the noncontroversial regulations, leaving the disputed ones for future settlement. Meantime, any court cases will be based on regulations already in effect. The problem is to prevent diagnosis and drug sale by mail, yet allow ethical drugstores to sell by mail to regular patients.

Physicians have continued to increase their earnings since 1949, but the rate of increase remains less than that for the general public. This report comes from Commerce Department, which queried a limited number of physicians to bring up to date the comprehensive survey of 1949 incomes. In the years 1949-51, men in independent practice continued well ahead of salaried physicians on a dollar basis, but the rate of increase for salaried men was higher.

Misunderstandings and confusion of the last hours of Congress resulted in depriving U.S. Public Health Service doctors of military status. Most important losses are death and survivors' benefits and uniform allowances. The next Congress will be asked to return PHS to military status.

The medical profession is now looking apprehensively toward Adlai Stevenson to see what his views regarding national compulsory health insurance are. Gen. Eisenhower has come out flatly in opposition to socialized medicine.

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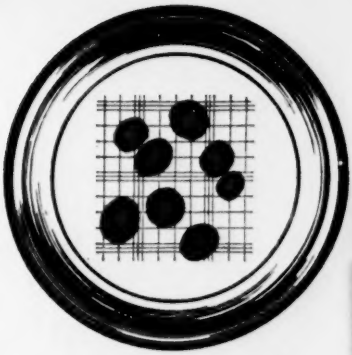

may be needed to accelerate recovery in the common anemias.

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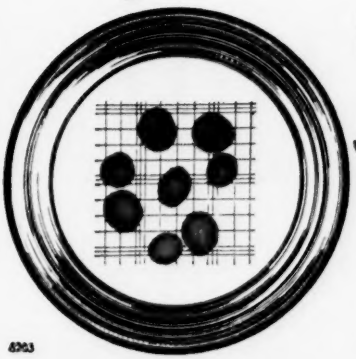

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Relief from Pain

fibrositic or neurotic

A Modern Medicine Editorial

One of the places in which physicians fall down is in the failure to do anything to help nervous women who have a localized distress or pain or "misery," commonly of fibrositic or neurotic or hysterical type. Usually such persons, after a thorough examination, are told only that there is nothing the matter with them, and are sent home.

Naturally they are dissatisfied and unhappy. They feel that they got nothing for their money. What is worse is that they often go to someone and get a dose of "Indian medicine," or they get their neck twisted, or their back thumped, or they get a "slowly emptying gallbladder" removed, and then for a time they brag about their new doctor and their sudden and miraculous recovery.

What happens often in such cases is that the woman has got so tired of her neurosis that she is willing to part with it. But she cannot afford to get well suddenly simply because nothing organically wrong was found. This would expose her to the sneers and even anger of relatives who for years have been paying her big doctor and hospital bills.

No, she cannot afford to get well except with the help of some hocus-pocus; she has to save her face. What she needs and wants, after hearing that her trouble is purely functional, is some little procedure that will enable her to get well with safety and dignity.

I strongly suspect that often these women would get well if the painful region was infiltrated with some local anesthetic. As Soma Weiss and others showed years ago, an injection of even as short-acting a drug as procaine will cure or relieve for awhile

a considerable number of these patients. It would seem, therefore, that we should try some such technic, especially when a patient has come from a distance hoping to be cured by an operation.

Some men will say, "But such hocus-pocus is not scientific medicine and I will have none of it. In fact, I am surprised to see you advocating such a thing." No, if a man uses some form of treatment, not as a racket to make money, but because he knows it often works a cure or helps the patients, he is a worthy follower of Hippocrates. I think he is a better and wiser physician than the one who sends his patients forth to be cured by some herb woman or chiropractor.

Theoretically, treatment with a local anesthetic would be immensely more likely to succeed if the doctor were to use a drug that would relieve pain for two weeks instead of two hours. In the April number of *Journal Lancet,* W. J. Puderbach and H. E. Shaftel stated that by using a water-miscible nonoily solution of procaine plus butyl ammobenzoate, they were producing anesthesia which lasted for about two weeks and did not injure the nerves involved. They injected from 1 to 2 cc. of the commercial preparation into the neighborhood of several adjacent intercostal nerves.

It might be well to try this treatment on some of the patients with aches of psychic or fibrositic origin.

WALTER C. ALVAREZ

Fees for House Calls

Recently the business manager of a medical clinic calculated that one of his doctors making house calls for $7 each was losing money for the firm. The doctor could make more by seeing patients in the office. Doctors often would do well to find out what a plumber or an electrician would charge for an emergency visit to a house. When a patient protests a charge, the doctor might then remind him what a plumber would get for a similar trip in the middle of the night to attend to a broken pipe!—W.C.A.

A common pulmonary condition occurring primarily in men over 50 has serious consequences unless treated early.

Progressive Bronchospastic Disease

JOSEPH BRADFORD, M.D.
Tulane University of Louisiana, New Orleans

PATIENTS who have overdistended lungs are uncomfortable partial invalids needing medical assistance. The condition is common in men over 50 years of age and can be recognized early from symptoms alone.

Spasm of the small bronchi and bronchioles producing obstruction and, finally, emphysema is called progressive bronchospastic disease by Joseph Bradford, M.D. The disease is chronic, slowly progressive, apparently irreversible, and differs considerably from asthma.

The etiology of progressive bronchospastic disease is unknown. Pulmonary infection may complicate but does not cause the lesion.

Paroxysmal coughing with small amounts of tenacious sputum and dyspnea the first hour after arising are the initial symptoms. Some patients find that warm water, coffee, or vomiting helps raise sputum and shortens the uncomfortable period.

No further distress occurs during daily activities and sleep is uninterrupted. Physical signs are usually lacking during this period and vital capacity is normal or above. However, reduced maximum breathing capacity and increased residual air indicate impaired ventilation.

With progression of the disease, exertional dyspnea becomes worse but is promptly relieved when the patient lies down. Sleep is comfortable with one pillow. Vital capacity may still be normal, but maximum breathing capacity is further reduced and residual air increases. Arterial oxygen and carbon-dioxide content are not affected.

Diminished breath sounds, prolonged expiration, increased thoracic anteroposterior diameter, and reduced diaphragmatic excursions are signs of chronically overdistended lungs. No râles are heard. Roentgenograms show darkened pulmonary fields.

In advanced stages, cyanosis appears after exercise and later at rest, indicating impaired gas exchange and hypoxia. Inability to concentrate, incoordination, weakness, poor appetite, and exhaustion are bothersome symptoms of oxygen shortage.

Dyspnea occurs with slight effort but not at night. The thorax is fixed, accessory respiratory muscles are taxed, and vertical diaphragmatic movement gives way to horizontal contraction.

Arterial oxygen saturation is reduced to 90% or less and carbon-dioxide content is increased.

Death may occur from irrever-

Progressive bronchospastic disease. Am. Pract. 3:349-352, 1952.

sible cardiac failure or from asphyxia alone.

Interference with breathing is frightening to the patient but insight will dispel fear and insure the cooperation needed for lifetime treatment. Simple language, diagrams, sketches, and analogies will facilitate understanding.

Bronchodilators such as aminophylline, 0.3 gm., with or without ephedrine, may relieve patients who commonly have morning breathlessness and exertional dyspnea in the late afternoon. These drugs are unnecessary at night and may disturb sleep. Aerosolized bronchodilators ameliorate severe dyspnea more promptly. Such agents may prevent morning attacks if taken about fifteen minutes before arising.

Saturated solutions of potassium iodide, 8 to 10 drops, after meals are safe, economical, and effective for morning cough. Patients' habits should be carefully reviewed and activities producing dyspnea abandoned.

Reminders to take it easy are not sufficient. Overweight must be reduced. Hypoxic patients should remain sedentary. Ace bandages or scultetus binders should be tried before emphysema belts are purchased.

Oxygen must be used with judicious caution for emphysematous patients with increased residual air. Continuous administration of high concentrations has serious and sometimes fatal consequences. Continuous low concentrations may produce addiction. Oxygen is most effective with a Boothby mask at concentrations of 10 to 12 liters a minute for ten to fifteen minutes intermittently.

Cor pulmonale with congestive failure is often controlled and even reversed with digitalis. Hypervolemia occurs regularly and periodic phlebotomy is helpful.

• PENICILLIN-RESISTANT BACTERIA increase in number in the oral flora during prolonged use of tooth powder containing penicillin. The resistance probably develops through multiplication and predominance of hardy strains as more sensitive competitors are eliminated. Should these resistant bacteria become pathogenic, infections refractory to penicillin might result, postulate Henry Welch, M.D., and associates of the Food and Drug Administration, Washington, D. C. Resistance is significantly increased to low concentrations of penicillin in streptococci, micrococci, *Neisseria*, and *Corynebacteria* isolated from the mouths of children who have used a penicillin dentifrice for three years. At penicillin concentration of 5 units per cubic centimeter no difference appears in the sensitivity of organisms from penicillin users and nonusers. However, no *Corynebacteria* resistant to 5 units per cubic centimeter were isolated from nonusers, while 26 of 185 penicillin users were hosts to strains of *Corynebacteria* resistant to this concentration.

Antibiot. & Chemother. 2:249-254, 1952.

Professional status and mode of life may have a bearing on the incidence of coronary heart disease.

Coronary Disease Among Physicians

J. N. MORRIS, M.R.C.P., J. A. HEADY, M.D., AND R. G. BARLEY, F.I.A.
Central Middlesex Hospital, England

IN England, general practitioners appear to be more susceptible to coronary heart disease than other civilians. Specialists or consultants have angina pectoris or myocardial infarction only slightly more frequently than do nonmedical contemporaries, but the incidence of coronary disease is twice as high among general practitioners.

The mortality rates from coronary heart disease during the period 1947-50 were 2.4 per 1,000 general practitioners of medicine, 1.5 per 1,000 specialists, and 1.4 per 1,000 men in England and Wales.

Some evidence suggests that this excessive morbidity from coronary disease among general practitioners has developed since World War II, remark J. N. Morris, M.R.C.P., J. A. Heady, M.A., and R. G. Barley, F.I.A.

A physician younger than 45 years and in good health now stands a 20% chance of acquiring coronary heart disease before the age of 65. However, the probability of a fatal attack is only 1 in 14.

Between the ages of 35 and 64, the annual incidence of first attacks of myocardial infarction or angina pectoris increases with age. For doctors between 60 and 64 years of age the annual rate is 16.6%.

The coronary death rate also rises with age to a high of 7.4 per 1,000 for men 60 to 64 years old. At all ages between 35 and 64 years coronary disease accounts for 1 out of 3 physician deaths.

Coronary disease in physicians in England first appeared clinically as myocardial infarction 79% of the time. Angina pectoris without infarction was the initial complaint in 17% of the cases.

Of the doctors who had infarction of the myocardium, 30% died in the first six days, and another 8% expired during the ensuing three weeks. Thereafter the death rate was about 2% a year.

The prognosis for angina pectoris is better. Only 11% had died within five years of the onset of symptoms. This compares closely to the prognosis for doctors who survived beyond the first month after myocardial infarction.

The survivors of coronary occlusion with infarction lost about four weeks from work a year. However, nearly half were never absent as long as a week at a time during six years after the attack.

Coronary heart disease in medical practitioners. Brit. M. J. 4757:503-520, 1952.

A type of gastrointestinal disorder occurring in widespread epidemics is often mistaken for other disease or overlooked.

Viral Dysentery

HOBART A. REIMANN, M.D.
Wynnewood, Pa.

BY far the most common type of acute epidemic diarrhea in the United States is a minor gastrointestinal disturbance usually overlooked or misdiagnosed.

Since one or more filtrable agents are apparently responsible, Hobart A. Reimann, M.D., proposes the term viral dysentery. Illness usually lasts only a few days and requires no treatment or only symptomatic measures, except in the severest cases.

Many observers in different parts of the world have described the infection by such names as summer disease, St. Lawrence fever, Hannover disease, intestinal influenza, or epidemic gastroenteritis.

Diagnosis may be further confused by simultaneous epidemics or complicating infections with the common cold, influenza, respiratory disease with gastrointestinal symptoms, or bacillary dysentery.

Epidemiology resembles that of the common cold, with transmission probably air-borne and favored by close contact. Contaminated food and water have not been implicated.

Although no specific virus has been isolated, volunteer subjects have been infected by inhalation and ingestion of filtered bacteria-free stools from patients. Sporadic infection occurs at any time; large or small epidemics are generally limited to late summer and fall.

Onset is generally abrupt, with discomfort or rumbling in the abdomen and a desire to defecate. However, the first symptoms may be anorexia, nausea, malaise, chilliness, and headache. Sudden vomiting may begin at night, especially in childhood. Onset with a shaking chill is less common.

Diarrhea soon develops, at first with liquid fecal stools which later become profuse and watery. From 1 to 20 movements may occur in a day. Stools never contain pus and rarely blood, unless from excoriation of the anus.

Patients complain chiefly of colic, diarrhea, and abdominal tenderness. General aching is common, and nasopharyngitis may be seen in 10 to 20% of cases. Temperature is normal or 99 to 100° F. The condition usually subsides in one to three days without bed rest or medical aid.

In 1 or 2% of instances, however, infection is serious, with shaking chills, fever of 104° F, and severe dehydration, which is most likely in small children or infants. Some attacks last a week or two,

Viral dysentery. Ann. West. Med. & Surg. 6:364-365, 1952.

and relapse or recurrence is possible.

Laboratory data are not characteristic. Leukocytes are rarely altered in number or proportions, but counts occasionally rise to 15,000. Stool cultures yield only natural flora. Biopsy of the rectal mucosa reveals slight inflammation, infiltrating plasma cells, and areas of epithelial desquamation.

Sporadic cases are usually interpreted as colds or the result of dietary indiscretion or drinking contaminated water. In children, acute mesenteric adenitis or poliomyelitis may be suspected. Since pain is often localized in the right lower quadrant, needless appendectomy may be done.

Epidemics of viral dysentery are easily detected in camps, schools, or other institutions. Food poisoning due to *Salmonella* or *Staphylococcus* can be excluded because only those who partake of the same meal are affected and are suddenly stricken and recover as promptly. Bacillary dysentery is diagnosed by a bacteriologic stool examination, and influenza affects chiefly the respiratory tract.

Treatment of malaise and abdominal pain consists of rest in bed with application of heat. Voluntary refusal to eat usually controls nausea, while paregoric may be helpful for colic and diarrhea. Headache and generalized aching are relieved by aspirin or codeine.

Although food is best restricted, fluids should be taken in whatever form desired. In some cases, isotonic sodium chloride and 5% glucose solution should be given in 1 or more intravenous infusions of 1,000 cc., but oral liquids are resumed as soon as possible.

¶ THYMIC ENLARGEMENT may be reduced temporarily by intramuscular injection of 40 to 100 mg. of ACTH in 4 divided doses daily for four to sixteen days. In 5 patients so treated, L. J. Soffer, M.D., J. L. Gabrilove, M.D., and B. S. Wolf, M.D., of Mount Sinai Hospital, New York City, observed shrinkage in the enlarged thymus, and in 1 patient with malignant thymoma, some decrease in the pleural metastases.

J. Clin. Endocrinol. 12:690-696, 1952.

¶ CHRONIC NEUTROPENIA in a nonsplenic, noncyclic form has been observed in 4 patients without any known leukopoietic disease. The term primary hypoplastic neutropenia is proposed for the condition by Theodore H. Spaet, M.D., and William Dameshek, M.D., of the New England Center Hospital and Tufts College, Boston. The bone marrow may have a specific granulocytic defect related to aplastic anemia. Repeated resistant infections and delayed wound healing are the chief manifestations.

Am. J. Med. 13:35-45, 1952.

Though a disease usually producing only prolonged and recurrent disability, asthma does cause death in some cases.

Review of Asthmatic Deaths

STEARNS S. BULLEN, SR., M.D.
University of Rochester, N. Y.

THOUGH uncommon, death from asthma does occur in all age groups, but more frequently in patients first afflicted with the disease in middle age or later.

Hospital records of 176 deceased asthmatic patients reveal that asthma was the primary or contributory cause in 94 of the deaths. In about one-half the cases, mostly persons whose asthma began after the age of 40, death occurred within ten years after onset of the disease; in about one-fifth of the total, within five years.

Because sensitivity to ingestants or inhalants was demonstrated in only a fourth of the asthmatic patients who died, Stearns S. Bullen, Sr., M.D., concludes that asthma resulting from such causes is less dangerous to life than is the intrinsic or bacterial variety.

Another conclusion from the survey is that asthma alone does not present a serious hazard to the heart, but that when irreversible changes, such as emphysema, occur in the lungs, heart damage is likely to result.

The chief causes of bronchial and bronchiolar obstruction are swelling and edema of the mucosa and submucosa of the bronchial wall and thick tenacious secretion in the lumina of the tubes. While extreme anoxia seems to be the chief factor in causing death from asthma, uncompensated gaseous narcosis may help to produce the terminal mental confusion and coma.

Judged by clinical standards, asthma caused about one-third of the deaths. Pneumonia and heart disease were the causes in most other cases, whether asthma was present in the final illness or not. Hypertrophy of the heart with or without dilatation was found in about one-third of the cases.

Of the 176 patients, 120 were males. The much greater male death rate is not understood, though a partial explanation may exist in the greater frequency of death from coronary artery disease and arteriosclerotic heart disease among males.

Morphine is blamed for some asthmatic deaths because the drug depresses the coughing reflex needed to expel secretions. But long-continued use of epinephrine by injection and inhalation is not believed harmful, since no pathologic changes were noted which could be attributed to such use.

Correlation of clinical and autopsy findings in 176 cases of asthma. J. Allergy 23:193-203, 1952.

The concentration of sodium in excretory fluids may be easily determined by direct precipitation.

Bedside Test for Sodium in Body Fluids

G. DOUGLAS TALBOTT, M.D., AND WILBERT KING
Veterans Administration Hospital, San Francisco

A SIMPLE, rapid semiquantitative test for sodium in urine or other discharges can be performed in office or home within a few minutes.

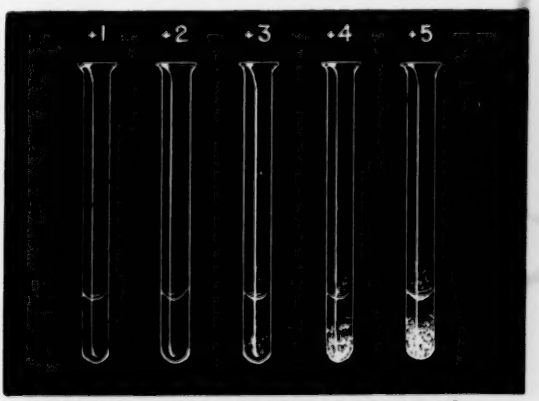
In the method presented by G. Douglas Talbott, M.D., and Wilbert King, sodium is precipitated with uranyl zinc acetate reagent, but the reagent is not saturated with triple salt. The procedure is an adaptation of an established method of chemical analysis.

The precipitate is read as 1 plus to 5 plus, and each degree represents a definite range of sodium ion concentration, expressed in milliequivalents per liter (see illustration).

The only equipment needed is a standard brown 2-oz. dropper bottle for the reagent, a 10-by-75-mm. test tube, and a medicine dropper like that in the bottle. Filter paper is used when the solution to be tested is turbid or cloudy, with a paper cup or other disposable unit for the filtrate. If desired, a set of standards may be prepared in small test tubes for comparison. Enough reagent to last for several years can be prepared from drugs costing approximately $4.

In a weighed 1-liter beaker are placed 40 gm. of reagent uranyl acetate, 24 gm. of 30% acetic acid, and water to make a total weight of 260 gm. A similar beaker is filled to the same weight with 110 gm. of zinc acetate, 12 gm. of 30% acetic acid, and double distilled water.

Beakers are heated separately on a steam bath, covered with watch crystals to prevent evaporation, and the contents are stirred frequently. Heating continues for two to three



mEq. Na 0-45 45-90 90-149 149-267 267-445+

Classification of precipitated sodium salt

A bedside method for semiquantitative sodium analysis. Stanford M. Bull. 10:82-86, 1952.

hours, until solution is nearly complete. The hot liquids are then mixed in a liter beaker, cooled, placed in a dark bottle, and filtered before use. The reagent is extremely poisonous and must be handled with caution.

A single drop of clear urine or other test solution is placed in a small clean test tube, and 8 drops of reagent is added. The mixture is shaken gently and, as a rule, read in eight minutes.

In determining values, several factors are considered:

1] The higher the concentration of sodium, the more rapid is the fall of particles.

2] Amount is estimated by both size and density of particles.

3] Precipitate rimming the tube above the fluid line is included with the portion at the bottom.

4] The heavier the precipitate, the whiter the solution.

False readings may result from 3 conditions: turbidity of the mixture, proteinuria, and prolonged reaction time.

1] The solution may become turbid after the reaction, owing to a soft cloudy filtrate apparently composed of acid urates. The test is then repeated with a drop of urine heated with a match or cigaret lighter, adding the reagent before cooling.

2] If albuminuria prevents accurate interpretation of the test, urine should be mixed with sulfasalicylic acid and filtered at the bedside before use.

3] Since the complete reaction requires six to ten minutes, total sodium concentration usually is not read for eight minutes. For a screening test, however, three or four minutes is enough.

The value of the test lies in the simplicity. For standard accuracy in reading, however, time and practice are required. The range of use is wide.

A value of 1 plus urinary sodium may reveal the low-salt syndrome and heart failure, or lapse from the low-salt diet. Capacity of renal tubules can be determined.

In connection with the bedside chloride test, sodium values of fistulous drainage, diarrheal stools, vomitus, and urine are invaluable guides to replacement therapy. With good renal function, the sodium supply can be controlled in a fluid balance problem.

¶ ANTITHYROID TREATMENT with 1-methyl-2-mercaptoimidazole usually produces a remission in seven to nine weeks, with few untoward reactions. Adults begin with 30 mg. daily in 3 doses, and amounts are reduced as toxicity declines. Children initially receive 15 mg. For maintenance after early remission, 10 to 20 mg. is ordinarily given adults. R. L. Kendrick, M.D., of the Mayo Clinic, Rochester, Minn., and Kent Balls, M.D., and Edward Rose, M.D., of the University of Pennsylvania, Philadelphia, report that results were good in 26 of 32 cases, fair in 5, and poor in 1, with preoperative courses in 15 instances and prolonged dosage in 17. Side effects, occurring in 3 cases, consisted of maculopapular and vesicular skin eruptions, urticaria, and pruritus.

Arch. Int. Med. 89:368-373, 1952.

As long as the heart continues to beat, victims of cyanide poisoning may be saved by prompt treatment.

Therapy for Cyanide Poisoning

K. K. CHEN, M.D., AND CHARLES L. ROSE
Indiana University, Indianapolis

INHALATION of amyl nitrite and intravenous injection of sodium nitrite and sodium thiosulfate will prevent death in most cases of cyanide poisoning.

Preparedness and speed are prerequisites, however, of successful treatment.

Amyl nitrite pearls and ampules of sodium nitrite and sodium thiosulfate, wet or dry, should be included in emergency kits.

Most deaths from cyanide are suicides, but accidental poisonings occur among fumigators, chemists, and workers in metallurgy, electroplating, and metal cleaning.

K. K. Chen, M.D., and Charles L. Rose report success of the antidote in 43 of 44 cases of poisoning by hydrocyanic acid, cyanogen chloride, or the cyanide of sodium, potassium, calcium, or silver, alone or in combination.

The following technic should be used if cyanide poisoning is likely, even though diagnosis is not definitely established:

1] Break pearls of amyl nitrite, 1 at a time, in a handkerchief and hold over patient's nose. If respiration has ceased but heart sounds are audible, artificial respiration is instituted by the back pressure, arm lift method.

2] Load a syringe with 10 cc. of a 3% solution of sodium nitrite (0.3 gm.) and another with 50 cc. of a 25% solution of sodium thiosulfate (12.5 gm.).

3] Inject the solution of sodium nitrite by the median cubital vein or a substitute vein, and the solution of sodium thiosulfate through the same needle and vein. Discontinue amyl nitrite inhalation.

4] If the poison was taken by mouth, gastric lavage must be done.

5] If signs of poisoning reappear or recovery is slow, sodium nitrite and sodium thiosulfate should be repeated in full doses. The patient should be observed for twenty-four to forty-eight hours.

6] In case of mercuric cyanide poisoning, additional measures such as injection of BAL are necessary to combat mercury intoxication.

Speed is important, but 4 of the 44 patients recovered after delays of one and a half to two and a half hours, indicating that cyanide poisoning is not as rapidly fatal as usually supposed. The prognosis is not hopeless as long as the heart continues to beat.

While sodium and amyl nitrites in excessive doses induce dangerous methemoglobinemia, total dos-

Nitrite and thiosulfate therapy in cyanide poisoning. J.A.M.A. 149:113-119, 1952.

es varying from 0.45 gm. to 1.5 gm. have been administered without serious reactions. The toxicity of sodium thiosulfate is also low, and total doses of 12.5 to 50 gm. by intravenous injection are well tolerated. Temporary fall of blood pressure may occur during the intravenous injection of sodium nitrite.

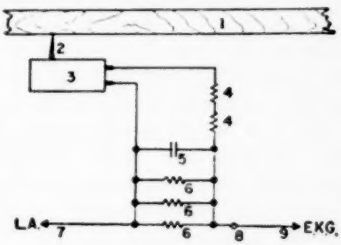
Device for Office Ballistocardiography

GEORGE SCHWARTZ, M.D., STANLEY FISHMAN, M.D.,
IRVING HIRSHLEIFER, M.D., AND ARTHUR FANKHAUSER, M.D.

A SIMPLE apparatus for ballistocardiography can be built in half an hour from ready-made parts for about $2. The assembly poses no technical problem.

The piezoelectric principle is utilized. An ordinary phonograph cartridge picks up body motion from a bar resting across the patient's shins. Records are timed with a single channel electrocardiograph by a superimposed marker.

Since the cartridge is extremely sensitive, resistance is placed in series with one pole, which is connected with the left arm electrocardiographic lead. The other pole is wired to the electrode on the left arm. The right arm lead is connected as for the ordinary electrocardiogram.



Schematic design

In the diagram, [1] is a wooden bar 15 in. long; [2] a pickup arm 3 in. long, either a straightened paper clip or a radio dial pointer; [3] an American phonograph cartridge, CR 1A; [4] 2 resistors in series, 22 and 8.2 megohms; [5] a condenser, 0.1 MFD-600 volt; [6] 3 resistors, 22, 12, and 12 megohms; [7] a wire to left arm electrode; [8] a connecting clip; and [9] the left arm cable from the electrocardiogram.

All resistors are ½ watt. The entire apparatus is enclosed in a plastic soap dish and clamped to a ring stand.

In use at King's County Hospital, Brooklyn, the device has been found rugged and durable, state George Schwartz, M.D., Stanley Fishman, M.D., Irving Hirshleifer, M.D., and Arthur Fankhauser, M.D. Tracings are free of electric interference and performance of the apparatus has been generally satisfactory.

A simple economical apparatus for office ballistocardiography. New York State J. Med. 52:1023-1024, 1952.

Definite influence is exerted by steroid hormones in stimulation and inhibition of many neoplasms.

Steroid Hormones and Cancer

SOLOMON I. GRIBOFF, M.D.
Haverstraw, N. Y.

STEROID hormones from the sex glands and adrenal cortex may be important in the pathogenesis, prevention, diagnosis, and treatment of certain malignant growths.

Analysis of steroid hormone interrelationships, with the effects on the endocrine glands and target organs, and a review of basic animal experiments have established the role of these hormones in the production of some neoplasms. Since steroids have been shown to influence the progression or regression of certain cancers, hope is held that alteration of the hormonal environment before the onset of malignancy may prevent carcinogenesis.

The diagnosis of malignant disease is frequently aided by the increased urinary excretion of steroid metabolites with the following hormone-producing neoplasms:

1] Ovary: granulosa-cell cancer, arrhenoblastoma, and adrenocortical carcinoma

2] Testis: interstitial-cell tumor and Sertoli-cell tumor

3] Adrenal cortex: adrenocortical carcinoma.

Furthermore, in many nonrelated forms of cancer the steroid metabolites in the urine are changed qualitatively and quantitatively. Solomon I. Griboff, M.D., believes that this observation may lead to a much needed biochemical test for early detection of cancer.

Although surgery and irradiation are the primary hopes for cure, steroid chemotherapy frequently gives striking palliative relief for the many patients with far advanced cancer of various types not in the curable class (see table). In addition to relief of pain and subjective well being, objective improvement and a prolongation of useful life by months or years may be attained. The malignant growths most susceptible to hormone therapy include those in the female breast, male breast, prostate, and lymphomas.

Furthermore, future studies may prove the value of adjunctive steroid chemotherapy pre- and postoperatively in raising the cure rate of surgical treatment in breast and prostatic cancer. Other neoplasms involving the female pelvic organs, bladder, testis, adrenal cortex, pituitary, and miscellaneous tumors may be aided by steroid hormones.

Female breast cancer—As palliative therapy, testosterone is given when the patient is premenopausal or early postmenopausal—150 to

The rationale and clinical use of steroid hormones in cancer. Arch. Int. Med. 89:635-685, 812-852, 1952.

VALUE OF STEROID HORMONES IN TREATMENT OF CANCER

Site or type of neoplasm	*Definite effect*	*Possible or theoretic effect*		*Adjunct to surgical measures or irradiation*
		Prophylactic	*Therapeutic*	
Female breast	Testosterone; estrogen	Testosterone; progesterone	Progesterone	Testosterone; estrogen
Male breast	Estrogen			Estrogen
Prostate	Estrogen	Progesterone	Progesterone	Estrogen
Pelvis		Testosterone; progesterone	Testosterone; progesterone	
Lymphoma	Adrenal corticoids		Estrogen added to adrenal corticoids	
Other neoplasms				
Bladder			Estrogen especially in males	Estrogen
Testes		Testosterone; estrogen	Testosterone; estrogen	
Adrenal cortex			Testosterone; progesterone; adrenal corticoids	
Pituitary			Testosterone; progesterone; adrenal corticoids	
Miscellaneous			Testosterone; estrogen; adrenal corticoids	

350 mg. of testosterone propionate per week or equivalent doses of other androgens. Women five or more years past the menopause receive estrogen (diethylstilbestrol 15 mg. per day; ethinyl estradiol 3 mg. per day or equivalent doses of other estrogens) for the primary tumor and metastases in lungs and soft tissue, but testosterone for symptoms from bone metastases. In general, subjective improvement is noted in 45 to 85% of the patients and objective improvement in 15 to 40%. Adequate doses for three to six months are essential for a good therapeutic trial.

During treatment renal function should be tested and strict watch kept for hypercalcemia, one of the most dangerous side effects. Progesterone and cortisone may also have a place in the treatment of certain patients, as suggested by preliminary studies.

Male breast cancer—Antiandrogenic therapy by castration or estrogen administration may be extremely useful for men with inoperable breast carcinoma, affording palliative improvement in most cases.

Prostate cancer—Androgen control of advanced prostatic cancer by castration and estrogen therapy—diethylstilbestrol, 1 to 20 mg. per day, or equivalent doses of other estrogens—has produced excellent temporary results, subjectively and objectively, in 50 to 90% of cases. Small maintenance doses of estrogen are recommended throughout the patient's remaining life. Progesterone may also be of value when other measures fail.

Lymphoma—The acute leukemias

frequently respond for a time to ACTH or cortisone, 100 to 300 mg. per day, particularly in about 70% of the lymphocytic types. Remissions are also produced in about 50% of cases of Hodgkin's disease, lymphosarcoma, chronic lymphatic leukemia, plasma-cell myeloma, and mycosis fungoides. The hormones have little value in the treatment of myelocytic or monocytic leukemia.

A course of hormonal therapy usually extends eighteen to thirty-two days with gradual decrease in dosage after control of the disease is obtained. Combinations of hormone and other types of recognized chemotherapy for lymphomas are being investigated. Increasing resistance to hormonal therapy frequently occurs with each succeeding course. The usual side effects of ACTH and cortisone therapy must be watched closely.

Uterine cancer—Endometrial and cervical cancer patients may have symptomatic improvement with testosterone therapy but no objective improvement has been noted.

Ovarian cancer—Postoperative recurrence of granulosa-cell tumor might be prevented by testosterone or progesterone. Estrogen may be tried for arrhenoblastoma; progesterone, testosterone, or adrenal cortical hormone for adrenocortical tumor; estrogen for chorioepithelioma, and testosterone for adenocarcinoma in hopelessly advanced cases beyond the aid of surgery or irradiation.

Bladder cancer—Grades I and II bladder carcinoma may be inhibited by estrogen in males, allowing final cure by surgical or radiotherapeutic measures.

Miscellaneous—Palliative estrogen therapy has been used, mainly on an empirical basis, for osteogenic sarcoma, cancer of the stomach or colon, hypernephroma, and metastatic endothelioma with questionable temporary alleviation of symptoms. No apparent response was noted in other neoplasms of the skin, maxillary antrum, rectum, and reticuloendothelial system.

Androgens such as testosterone increase strength, weight, and well-being in some instances of advanced metastatic carcinoma, probably by means of anabolic effects. Adrenal corticoids may relieve symptoms of some patients with cancer chiefly by reducing local tissue edema or increasing the sense of well-being.

The exact mechanisms of action of the steroid hormones in alleviating cancer patients are not yet definitely clarified. The effects on protein metabolism, electrolyte balance, and enzyme systems are undoubtedly important and further studies may emphasize the biochemical alterations in the metabolism of both normal and neoplastic cells.

Surgery and irradiation offer best hope for cure at the present time but do not give the final answer in many cases. Chemotherapy may be the necessary approach for future success in the cancer field and is given further impetus by the demonstration of definite palliative benefits with the employment of steroid hormones in some types of cancer.

The effects of tobacco upon the healthy and the diseased body are of concern to every practitioner.

Effects of Tobacco Smoking

RONALD BODLEY SCOTT, D.M.
St. Bartholomew's Hospital, London

THE physician's advice on smoking reflects his own smoking habits. Ronald Bodley Scott, D.M., believes that legitimate facts should replace prejudice and personal opinions when giving advice to patients about smoking.

Nonsmokers live longer than smokers and survival is shorter for heavy than for moderate smokers. Smokers are more apt than nonsmokers to have colds, dyspnea, and dyspepsia.

Nicotine, the only important alkaloid in tobacco leaves, stimulates, then paralyzes the sympathetic nerve endings. About 0.5 mg. is absorbed from 1 cigaret smoked without a holder. After smoking 20 cigarets in seven hours, blood nicotine is about 0.14 mg. per liter and traces remain for ten hours.

Sweating, faintness, tachycardia, nausea, and vomiting appear in nonsmokers after 1 to 6 mg. of nicotine is injected subcutaneously. Much larger doses are tolerated by regular smokers.

Other products of cigaret smoke are hydrocyanic acid, ammonia, carbon monoxide, pyridines, aldehydes, and tars. Enough carbon monoxide is absorbed from 20 cigarets daily to maintain 5% of hemoglobin in carboxy form.

Cardiovascular system—A cigaret increases blood pressure an average of 10 mm. diastolic and 15 mm. systolic and the pulse about 8 beats a minute. T waves are lowered or even inverted. Such effects disappear when the cigaret is finished. Decreased limb volume and lowered skin temperatures while smoking show arteriolar narrowing.

Such phenomena obviously will aggravate cardiovascular disease but no proof has been found that tobacco will initiate the disease. Among patients with angina pectoris, the number of smokers does not differ significantly from the number of nonsmokers. However, the incidence of angina pectoris is slightly higher for heavy than for light smokers.

The therapeutic deduction is that patients with anginal attacks from smoking should abstain. No reason is known to forbid other patients with angina from smoking, but a trial of abstinence is justified.

Smoking does not cause thromboangiitis obliterans nor other peripheral vascular disease, but tobacco will produce vasoconstriction, dangerous in obliterating vascular disease, and therefore, patients with that disease should not smoke. Gan-

Some medical aspects of tobacco-smoking. Brit. M. J. 4760:1:671-675, 1952.

grene or reduced skin vitality with intermittent claudication contraindicates smoking.

Respiratory system—Smoking of cigarets reduces vital capacity and chest expansion. Irritation from heavy smoking leads to chronic pharyngitis and will aggravate chronic bronchitis in the predisposed. The existence of smoker's cough must be admitted, but carcinoma, tuberculosis, or bronchiectasis cannot be traced to nicotine.

Statistical investigations indicate that cigaret smoking may cause bronchial carcinoma. One study concludes that carcinoma is 50 times more likely to develop in persons over 45 years old smoking 25 or more cigarets daily than in nonsmokers. Other approaches to the problem, however, yield insufficient evidence to incriminate tobacco.

Alimentary tract—Cancer of the lip is more common among pipe and cigar smokers than in the general population.

Decreased gastric motility with reduced volume and acidity of secretion may occur with cigaret smoking, but not when smoking is pleasurable. Smoking apparently does not affect genesis or healing of peptic ulcers.

Other effects—Malnutrition may predispose to tobacco amblyopia, according to some reports.

Amounts of nicotine in the nursing mother's milk increase with the number of cigarets smoked, reaching 0.5 mg. per liter for heavy smokers. Infants fed such milk thrive normally, though receiving about 0.2 mg. of nicotine daily.

¶ METASTATIC CARCINOMA of the liver is frequently accompanied by disproportionately high bromsulfalein retention and normal or slightly abnormal reaction in cephalin-cholesterol flocculation tests. Lawrence J. Thomas, M.D., of George Washington University, Washington, D. C., and Hyman J. Zimmerman, M.D., of the University of Nebraska, Omaha, stress the importance of the coexistence of the phenomena as a pattern not present with cancer unless hepatic extension has occurred. However, the pattern is frequent with congestive heart failure and occasional with Laennec's cirrhosis.
J. Lab. & Clin. Med. 39:882-887, 1952.

¶ TOXIC EFFECTS OF PAS may result in hypoprothrombinemia and severe injury to the hepatic parenchyma during treatment of pulmonary tuberculosis with para-aminosalicylic acid. Although complications are not common, S. Bøyum, M.D., recommends frequent leukocyte counts and urinalyses. Prothrombin tests should be done before operations and for patients with a tendency to hemoptysis. At Ringvål Sanatorium, Oslo, administration of PAS is discontinued and vitamin K given a couple of weeks before surgery.
Tidsskr. norske laegefor. 71:753-785, 1951.

*Often patients who describe their discomfort as "gas **pains**" are, in reality, experiencing spasm.*

Abdominal Distention and Gas Pains

WILLIAM H. BACHRACH, M.D., AND LUDWIG STRAUSS, M.D.
Cedars of Lebanon Hospital, Los Angeles

MANY factors, medical, surgical, or purely psychologic, can produce bloating or sensations mistaken for effects of gas. Although interpretation is often difficult, much distress is prevented by understanding the basic physiology and pathology.

Medical Aspects

WILLIAM H. BACHRACH, M.D.

PEOPLE who describe symptoms of gas and distention often have little abdominal protrusion and only small amounts of air are seen during radiographic examination. Some type of spasm is frequently responsible for discomfort. The sense of bloating may be increased by a viscerocutaneous reflex which induces hyperesthesia of abdominal skin, so that a tight girdle or belt is intolerable.

Seeking relief, the affected person vainly tries to belch and, in order to succeed, he may swallow air or may take sodium bicarbonate.

In some cases, aerophagia is simply a nervous habit, and the only remedy is to explain the situation and teach self-control. In the experience of William H. Bachrach, M.D., however, air is usually swallowed because of a distressing gastrointestinal abnormality.

Antacids are usually effective if spasm is the result of peptic irritation of the esophagus, stomach, duodenum, sphincter of Oddi, or jejunum. Failure of treatment is generally explained by inadequate dosage. Instead of 1 tbs. of aluminum gel every two hours, for example, 2 oz. may be required every hour.

Reflex spasm of the esophagus, cardia, or stomach may be initiated by disease in other organs as well as by local irritation of intrinsic nerves. In either instance, 1 or 2% procaine solution may be administered in 1- or 2-oz. doses.

Anticholinergic drugs may bring relief, but exacerbation from such agents does not necessarily mean that the patient is hysterical. Barbiturates have a rather selective action on autonomic nervous centers in the brain and are helpful when spasm has a central origin.

No opiates or other habit-forming drugs should be allowed. Such agents may lessen pain but only intensify the basic physiologic disorder.

In some individuals various foods are flatulogenic, especially milk, legumes, and cabbage. A peculiarity of intestinal flora may be responsible for the condition; in other

Abdominal distention and gas pains. Ann. West. Med. & Surg. 6:445-447, 1952.

cases the irritating food inhibits intestinal absorption of gas, by causing either hyperperistalsis or allergic mucosal inflammation.

Carbonated beverages may produce bloating because the gas-absorptive functions are impaired and the carbon dioxide initiates gastrointestinal spasm rather than orderly peristalsis.

A few aviators have gas pains when flying at altitudes in which abdominal gases expand. Apparently, enterocolic spasm prevents normal passage of flatus.

Decompensated cardiac invalids sometimes have bowel distention by gas and fluid, owing to anoxemia of intestinal mucosa. Unless the basic ailment can be alleviated, relief is almost impossible.

Hypersthenic habitus with a cascade stomach may prevent eructation of gastric air bubbles. A thin stomach tube may be employed for aspiration, or belching is assisted by lying on the left side. After meals, the Trendelenburg position may promote onward movement. Air swallowing in such cases should be reduced by circumspect eating and drinking.

In women who describe sudden daily bloating, intestinal fluid is perhaps blocked by spasm, or air is aspirated through an incompetent upper esophageal sphincter. Barbiturates and drugs affecting smooth muscle may be indicated.

Surgical Aspects

LUDWIG STRAUSS, M.D.

SENSATIONS of painful gas after an operation may actually be caused by overconcern for bowel movements. Sometimes other symptoms are misinterpreted as gas pains.

The physiology of intestines prepared for operation should not be disregarded. Prompt evacuation must not be expected and unneeded cathartics should be avoided, explains Ludwig Strauss, M.D. The nature of symptoms should be explained and anesthetic rectal suppositories employed.

Gas is often wrongly blamed for nausea, borborygmi, and pain arising from the surgical wound. A needless enema or Harris flush given because bowels have not moved every day may result in distention.

From 70 to 80% of intestinal gas, however, is swallowed air. Gastric suction should be used whenever intestinal anastomosis is done and also for twenty-four hours with cholecystectomy. If suction fails, breathing of 100% oxygen may help.

Since painful gas is frequently held in the colon by an overcontracted anus, sphincters should be relaxed and lubricated by a suppository containing Surfacaine, a local anesthetic. The agent has very low toxicity, and risk of systemic absorption is practically nonexistent.

Suppositories are employed routinely at least twice a day after every laparotomy, starting thirty-six hours postoperatively. As a rule, flatus is expelled.

Simple medical treatment usually is adequate for diverticulitis of the colon when started soon enough.

Diverticulitis of the Colon

JOHN L. HORNER, M.D.
Washington University, St. Louis

IF treated early, patients with diverticulitis of the colon rarely require surgery. The incidence of surgical complications seen in office practice is probably under 5%. Modern chemotherapy today will adequately control many complications of diverticulitis formerly dependent on surgery.

The gloomy side of the picture has usually been presented, states John L. Horner, M.D., because most statistics are drawn from hospital wards, often surgical wards. The patients dealt with are those not treated early, hence complications are frequent. Moreover, an assumed parallelism is said to exist between appendicitis and diverticulitis and is used as a reason for operation. The validity of such a parallel is not borne out.

The sigmoid alone or in combination with other segments is the site of the diverticula in over 90% of cases. Diverticulitis occurs in about one-fifth of cases of diverticulosis and is more common in patients who have widespread involvement.

Patients with only one diverticulum rarely have inflammatory complications.

The incidence of diverticulosis increases with age. However, a patient of 30 with diverticulosis is just as likely to have infection as is a patient of 60.

The indications for surgery are generally considered to be:

1] Acute perforation of a diverticulum with peritonitis
2] Acute or chronic perforation with fistula formation
3] Peridiverticular abscess
4] Chronic obstruction
5] Inability to eliminate possibility of carcinoma
6] Persistent gross hemorrhage.

All of a group of 75 consecutive office patients with diverticulitis were successfully managed without surgery. Each had acute constipation or diarrhea, localized abdominal cramping, localized muscle guarding or great tenderness, fever, and leukocytosis.

Gross hemorrhage occurred seven times, perforation with localized peritonitis twice, and peridiverticular abscess once. Acute obstruction was frequent but lasted only three or four days. Chronic obstruction and fistula formation, the two indications for surgery that are universally recognized, were not encountered.

Carcinoma developing coincidently with diverticulitis did not present a problem in diagnosis, being recognized easily.

A study of diverticulitis of the colon in office practice. Gastroenterology 21:223-229, 1952.

Medical treatment consists of bed rest, liquid diet, heat on the abdomen, antispasmodics, chemotherapy, and mineral oil. The vast majority of patients can be treated at home. The chemotherapeutic agents most commonly used are sulfasuxidine and sulfathaladine in doses of 2 to 3 gm. daily. For severe infection, penicillin or aureomycin may be used.

On the basis of the simplicity of treatment and excellent results of the above regimen the recent emphasis in the literature on surgical treatment seems unjustified.

Banthine and Upper Bowel Motility

WILLIAM P. CHAPMAN, M.D., ARTHUR B. FRENCH, M.D., PHYLLIS S. HOFFMAN, AND CHESTER M. JONES, M.D.

THE autonomic blocking agent Banthine reduces gastric secretion and is more potent than belladonna in suppressing gastrointestinal activity.

Effects of the 2 agents on 31 healthy adults were compared by William P. Chapman, M.D., Phyllis S. Hoffman, and Chester M. Jones, M.D., of Harvard University and Massachusetts General Hospital, Boston, and Arthur B. French, M.D., of the University of Utah, Salt Lake City.

Balloons were inflated at various sites in the stomach, duodenum, and upper jejunum. Motility was recorded by kymograph forty-five minutes before administration of the agent and at intervals of forty-five minutes to four hours after.

Before each quarter hour, total contractions and tone were determined at five-minute levels by measurements of surface areas beneath the tracings with a polar planimeter. Average tone levels per five-minute period during nonspastic intervals were gauged by a centimeter ruler.

Motor effects of Banthine were sufficient to explain prompt relief of ulcer pain or discomfort. A 100-mg. oral dose greatly reduced propulsive and total contractions and decreased tone slightly to moderately. The action was quicker and more pronounced than that of belladonna in doses of 0.4 and 0.6 cc.

Dryness of the mouth was more noticeable after Banthine administration than after belladonna, and the heart rate was increased. Side effects tended to subside with continued medication.

Which of the two drugs is better for peptic ulcer and other alimentary disorders can be demonstrated only by prolonged trial, however.

Multiple-balloon-kymograph recording of the effect of Banthine, belladonna and placebos on upper-intestinal motility. New England J. Med. 246:435-443, 1952.

Susceptibility or resistance of the organism and site of infection are important factors in antibiotic therapy.

Effective Use of Antibiotics

PERRIN H. LONG, M.D.
State University of New York, New York City

WHEN employing antibiotics for the treatment of infectious processes, knowledge of the mode of action of the drug against the infecting agent is extremely important.

With dosages generally used by most physicians, the effect on the invading microorganism is probably bacteriostatic and not bactericidal, in the opinion of Perrin H. Long, M.D. Thus, for recovery from an infection, the bodily defenses of the host must take part and, if treatment is stopped too soon, recrudescence of the illness occurs.

The physician must decide first whether the intended dosage schedule will provide a bacteriostatic or bactericidal concentration at the site of infection. The location of the infection is an imperative consideration; high concentrations of an antibiotic are required in the blood if the infection is in an area of poor blood supply. In walled off processes such as abscesses, penetration of the antibiotic into the affected region is much impeded. To assure a killing effect, the tissue concentration of the agent must be several times higher than is needed for bacteriostatic action.

Susceptibility of the organisms to antibiotics varies widely. For example, the gonococcus is easily killed by penicillin—an intramuscular injection of 75,000 units of procaine penicillin in oil with 2% aluminum monostearate added is about 100% effective against gonorrhea in males—whereas to obtain bactericidal effects against infections with some strains of beta hemolytic streptococci or pneumococci, 2 to 5 times as much penicillin is needed.

Bacteriostasis is often all that is needed, because surface phagocytosis in the lungs, lymph nodes, and subcutaneous tissues is important in ridding the body of invading microorganisms.

Another consideration is the so-called natural resistance of the pathogen to the antibiotic. Although the staphylococci were originally extremely susceptible to penicillin, many strains have lately become resistant and elaborate penicillinase, a substance that antagonizes the antibacterial effects of penicillin. No so-called natural antagonist resembling penicillinase seems to exist for streptomycin, aureomycin, chloramphenicol, or terramycin.

In the case of penicillin, resistance is not a problem in the treatment of beta hemolytic streptococcal, pneumococcal, gonococcal, spi-

The mode of action of antibiotics. New York State J. Med. 52:1637-1639, 1952.

rochetal, or meningococcal infections.

Organisms may not only become resistant to streptomycin, but even require the antibiotic as a growth factor. Streptomycin is probably of practical value now only in the treatment of tuberculosis.

Resistance to aureomycin, chloramphenicol, and terramycin develops slowly and in a steplike pattern similar to the pattern shown by the sulfonamides and penicillin. The physician will find that bacterial resistance has not become important in therapeutic use of these three antibiotics. Increases in resistance which may be two- or even fourfold or more do occur, but the development of strongly resistant, fast, or dependent strains has not been noted.

Depot-Curarin for Tetanus Therapy

SIEGFRIED FACKERT, M.D.

SUCCESSFUL symptomatic treatment of tetanus may be achieved with depot curare, which obviates many of the difficulties, such as uneven levels and the need for frequent injections, entailed with use of aqueous solutions.

Siegfried Fackert, M.D., of Mannheim City Hospitals, Germany, uses Depot-Curarin-HAF, which is the pentahydrate of d-tubocurarine chloride. The compound is given, 30 mg., 200 units per cubic centimeter, in a buffer vehicle for intramuscular injections. The slow absorption assures a constant level of curarization for about twenty-four hours.

Effects are noticeable a few hours after injection. Trismus diminishes, opisthotonos relaxes, and voluntary movements become somewhat possible. The tendency to tonic convulsions is decreased so that sedation can be greatly reduced or even omitted. The danger of pulmonary complications is diminished by the elimination of deep sedation or anesthesia; asphyxia from tonic contraction of the diaphragm is prevented.

Treatment with Depot-Curarin should be instituted as early as possible. The dose varies with the age, weight, and muscular development of the individual as well as with the gravity of the disease. The initial dose, usually 100 units, can be repeated if not satisfactory; as much as 400 units can be given as a single dose when necessary. The injections are repeated daily or oftener for five to twelve days.

If symptoms reappear after discontinuation of curare, treatment is resumed.

Depotcurare in der Therapie des Tetanus. Chirurg. 23:202-205, 1952.

Recognition of staphylococcic endocarditis and early antibiotic treatment are often lifesaving.

Staphylococcic Endocarditis

HARRY F. DOWLING, M.D., MARK LEPPER, M.D.,
ESTON R. CALDWELL, M.D., AND HAROLD W. SPIES, M.D.
University of Illinois, Chicago

ENDOCARDITIS caused by staphylococci is an uncommon, often fulminating process that requires antibiotics, when first apparent, to save the patient's life.

The outlook is most hopeful if the infecting organism is inhibited in vitro by 0.5 unit of penicillin or less per cubic centimeter. With prompt diagnosis and suitable care, about half the patients recover.

A practical regimen is outlined by Harry F. Dowling, M.D., Mark Lepper, M.D., Eston R. Caldwell, M.D., and Harold W. Spies, M.D., who analyzed 25 recent cases and reviewed the literature.

Endocarditis is classed arbitrarily as acute and subacute by rather indefinite, sometimes overlapping criteria. In general, acute infection is caused by virulent pyogenic bacteria, tends to attack previously uninjured valves, and has a short, rapidly fatal course. The subacute form is typically the result of less potent organisms, follows valvular damage, and may continue for weeks or months.

Staphylococci are usually responsible for acute endocarditis, although *albus* strains, in particular, may cause subacute disease. Staphylococcic conditions are apparently diagnosed more often now than formerly; in the United States, about 300 new cases are found yearly.

The ratio of streptococcic to staphylococcic infection is 2.6 to 1. The rarer condition affects people of all ages, but incidence reaches a peak in the third and fourth decades.

Symptoms and final outcome show no consistent relation to the biologic features of invading bacteria. *Staphylococcus aureus* is isolated in the majority of cases, and ordinarily the specific strains hemolyze blood and coagulate normal serum in vitro.

Possible sources of staphylococcic endocarditis are infection of the skin or subcutaneous tissues, localized abscess elsewhere in the body, preexisting cardiac lesions, osteomyelitis, puerperal sepsis, and intravenous injection without sterile precautions. Heroin addicts should be examined closely for telltale scars on the forearm.

Common symptoms and signs with staphylococcic endocarditis, in order of frequency, are chills, skin eruptions, arthritis of 1 or more

Staphylococcic endocarditis: an analysis of 25 cases treated with antibiotics, together with a review of the recent literature. Medicine 31:155-176, 1952.

joints, cough, chest pain, enlargement of the spleen, meningismus, and subcutaneous abscesses. The outstanding manifestations of streptococcic subacute bacterial endocarditis are palpable spleen, clubbed fingers, petechiae, and chills.

Because of the rapid course, staphylococcic infection should be diagnosed as soon as possible, but therapy cannot be delayed until bacteria are identified. If temperature rises and cardiac murmurs develop under observation, several blood cultures should be taken at hourly intervals.

To prevent destruction of heart valves, penicillin therapy is begun immediately in large doses, such as 1,000,000 units intramuscularly every two hours, or 500,000 units with carinamide or Benemid.

When staphylococci are isolated, sensitivity to penicillin should be determined. The dose is then adjusted to maintain at least 4 times the minimal inhibitory concentration in the blood at all times.

If the desired level cannot be achieved, or if the condition does not improve within five days, bacterial sensitivity to other antibiotics, single and combined, should be tested, and suitable agents employed. In cases with suppurative arthritis, empyema, or lung abscess, special measures may be necessary.

If the regimen is effective, treatment is continued four to six weeks, until temperature remains normal and the blood sterile, with no evidence of local infection. The patient is observed for two weeks more before discharge.

Endocrine Relation to Benign Breast Lesions

LAWRENCE C. KIER, PH.D., ROBERT C. HICKEY, M.D.,
WILLIAM C. KEETTEL, M.D., AND NATHAN A. WOMACK, M.D.

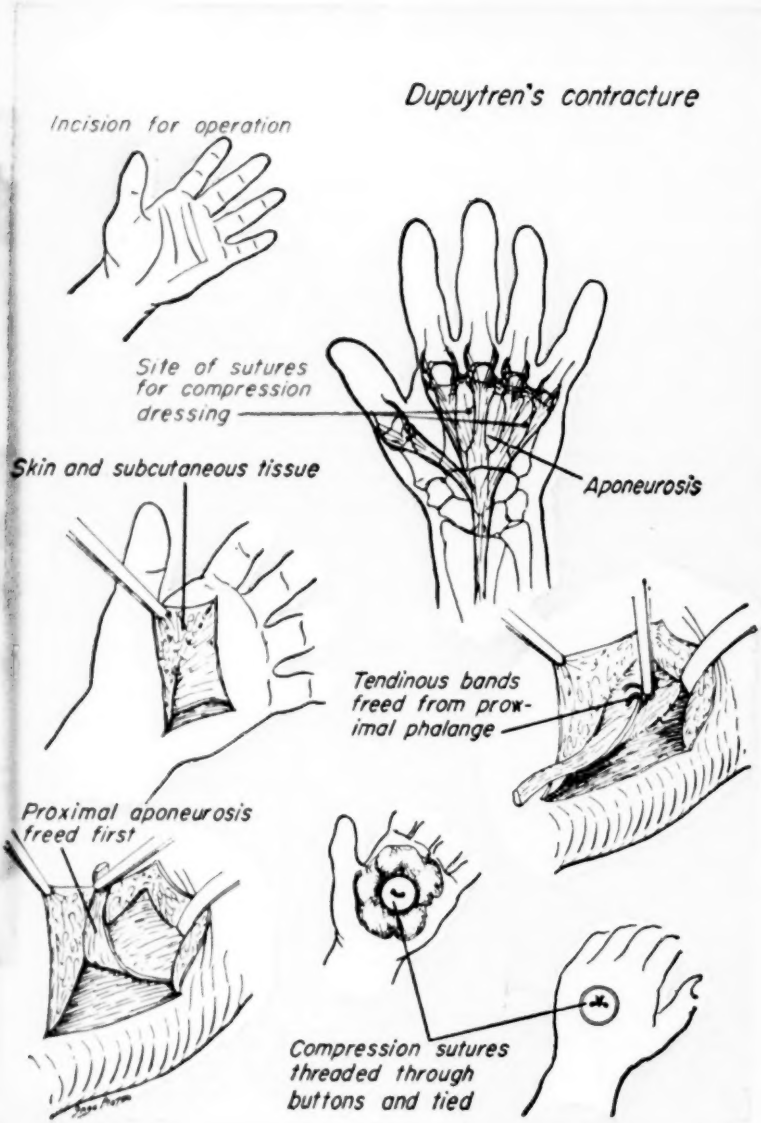
FIBROCYSTIC disease of the breast and chronic cystic mastitis may be produced not only by excess of estrogen but by lack of androgen.

Inadequacy is probably related to deficiency of ovulation and of corpus luteum formation. Endocrine influence is demonstrated by direct assay of breast tissue for hormone content.

Values for women with benign breast lesions and normal subjects were compared by Lawrence C. Kier, Ph.D., Robert C. Hickey, M.D., and William C. Keettel, M.D., of the State University of Iowa, Iowa City, and Nathan A. Womack, M.D., of the University of North Carolina, Chapel Hill.

Breast tissue with benign lesions averages 0.88 mg. of androgen per gram of dry weight, in contrast to 1.85 mg. for healthy subjects. Estrogen content of pathologic samples is generally within normal range, 1.77 compared with 1.57 mg. for undamaged tissue.

Endrocrine relationships in benign lesions of the breast. Ann. Surg. 135:782-790, 1952.


Dupuytren's contracture
Incision for operation
Site of sutures for compression dressing
Aponeurosis
Skin and subcutaneous tissue
Tendinous bands freed from proximal phalange
Proximal aponeurosis freed first
Compression sutures threaded through buttons and tied

Compression suture with surgical correction of Dupuytren's contracture eliminates postoperative bogginess.

Operation for Dupuytren's Contracture

RADFORD C. TANZER, M.D.
Dartmouth College, Hanover, N. H.

PERMANENT correction of Dupuytren's contracture requires a thorough resection of the involved aponeurosis. Postoperative hematoma may be avoided by use of a compression suture.

Dupuytren's contracture, progressive fibrosis of the superficial palmar fascia and the overlying subcutaneous tissue and skin, is a hereditary disease chiefly found in adult males, states Radford C. Tanzer, M.D.

The disease usually begins with the appearance of small, thickened plaques in the palm, ordinarily in the distal palmar crease overlying the tendon to the ring or little finger. Longitudinal bands develop over a period of months or years and produce progressive contraction of the associated fingers, involving primarily the metacarpophalangeal and at times the proximal phalangeal joints. Later, the index and middle fingers may become similarly but less extensively involved.

Diagnosis of the condition is ordinarily easy to make. The earliest forms may be confused with simple callus, and the more overt types may possibly be mistaken for congenital contractures of the fingers or spastic or flexure contracture due to injury or infection. However, none of these conditions has the typical dimpled palmar thickening.

Nonoperative measures are ineffective. Subcutaneous fasciotomy offers palliative relief only.

The appearance of definite finger contracture is substantial indication for operation. Surgery should be employed before fibrosis of the skin is so advanced that skin grafting may be necessary after the fascial resection. The fascia need not be stripped from fingers showing no evidence of thickening in the proximal phalanges.

A bloodless field is necessary. The most common approach is through an L-shaped incision, paralleling the distal crease, then turning along the ulnar side of the palm and continuing proximally.

The aponeurosis is first separated throughout the palm from the overlying skin and remaining subcutaneous tissue while still under tension, to facilitate the dissection, and is then divided from the proximal attachment, giving immediate relaxation, and carried forward en bloc. At the point of bifurcation of the tendinous bands, the intertendinous septa become visible. Longitudinal incisions detach the septa from the deep palmar fascia.

The dissection is now carried be-

Dupuytren's contracture. New England J. Med. 246:807-813, 1952.

neath the distal skin flap, carefully separating skin from fibrous plaques and freeing the deep band-like extensions from the transverse metacarpal ligament. A midlateral incision extended at a right angle permits opening of any involved fingers at the proximal phalanges for removal of fibrotic tissue en bloc with the palmar dissection.

After the fascia is resected, any obviously devitalized skin must be removed and replaced by a full-thickness skin graft taken from the medial aspect of the upper arm.

After careful hemostasis, rubber drains with silk threads attached are brought out on either or both sides of the palm. These are extracted the next day.

Removal of the aponeurosis leaves a potential space for hematoma formation. The usual compression dressing tends to narrow the carpal arch and thus intensify the concavity of the palmar defect. To obliterate the space, a compression suture is used to pull the palmar dressing down into the cup of the palm.

Before the skin incisions are closed, a mattress suture of 000 silk, double-armed on straight needles and incorporating a button, is passed directly through the hand at two points. The first needle penetrates the skin between the second and third metacarpal bones, passes under direct vision to one side of the neurovascular bundle, and pierces the intermetacarpal space at a level far enough distalward to avoid the deep volar arch and ulnar nerve, emerging through the dorsal skin. The second needle is introduced in the same manner between the fourth and fifth metacarpals.

After wound closure, packing of fluffed gauze or surgical waste is carefully introduced beneath and around the silk loop in the palm, and the button is drawn onto the packing. Threaded through a button on the dorsum of the hand, the two ends are tied with moderate firmness over gauze. A conventional fluffy dressing with elastic bandage support is then built up around the compression suture, the hand being placed in a functional position.

After seven to ten days, gentle but restricted exercises are begun with the aid of a dorsal extension splint.

RECTAL LEIOMYOSARCOMA may develop at the site of benign recurrent leiomyoma after incomplete conservative removal. Zvi Neuman, M. D., of the Hebrew University–Hadassah Medical School, Jerusalem, observed 1 of the few cases that have been reported. A nodular tumor containing myoma and fibroma was enucleated with the finger. About four years later, a small mass of similar tissue adherent to adjacent structures was partly excised. In three years, malignant growth without visible metastases was removed by abdominoperineal resection. Nearly two years after the last procedure, the patient was in good health.

Ann. Surg. 135:426-430, 1952.

Potassium deficiency frequently occurs with pyloric obstruction, requiring replacement therapy.

Electrolyte Loss with Obstruction

HYMAN S. LANS, M.D., IRVING F. STEIN, JR., M.D., AND KARL A. MEYER, M.D.
Northwestern University and Cook County Hospital, Chicago

GASTRIC juice is high in potassium content as well as chloride. Therefore, vomiting because of pyloric obstruction leads to hypokalemia as well as hypochloremia and alkalosis. Consideration must be given to all electrolyte deficiencies.

Many of the toxic symptoms of pyloric obstruction result from potassium loss. Lethargy, apathy, mental confusion, depression, shallow respirations, and muscular weakness to the point of flaccid paralysis may develop.

Administration of normal saline and glucose solutions helps correct dehydration but fails to improve the alkalosis or hypochloremia. Further, these parenteral fluids aggravate the hypokalemia by dilution and by increasing urinary loss of potassium.

Intravenous potassium should be given. Hyman S. Lans, M.D., Irving F. Stein, Jr., M.D., and Karl A. Meyer, M.D., recommend the addition of 3 gm. of potassium chloride to a liter of saline, 5% glucose, or amino acids. The solution is given intravenously at a rate of 120 to 180 drops per minute. Each liter will contain 40 mEq. of potassium.

If facilities permit, serum potassium should be determined before beginning treatment. The normal potassium concentration is between 4 and 5.6 mEq. per liter. Most patients with pyloric obstruction will have less than 3.5 mEq. of potassium per liter.

When prolonged vomiting or gastric suction has caused potassium deficiency, a total of 9 to 15 gm. of potassium chloride may be needed. The serum potassium level should be determined frequently.

After the potassium deficiency is corrected, 6 gm. of potassium chloride daily is given for maintenance. When oral feedings are begun, extra potassium is not needed.

Each liter of gastric juice contains from 6.5 to 26 mEq. of potassium. Fluid loss by vomiting or gastric suction should be measured and replaced liter for liter with a 0.45% saline, 2.5% dextrose solution to which is added 3 gm. of potassium chloride.

Potassium therapy is hazardous in the presence of renal disease. Many patients with pyloric obstruction have azotemia and oliguria from dehydration, alkalosis, and increased protein catabolism.

Electrolyte abnormalities in pyloric obstruction resulting from peptic ulcer or gastric carcinoma. Ann. Surg. 135:441-453, 1952.

Differentiation from true renal disease is assisted by finding a high specific gravity of the urine and a low blood creatinine concentration. With prerenal azotemia, as occurs in pyloric obstruction, the creatinine : nonprotein nitrogen ratio exceeds 1:20.

If dehydration is extreme, 1 liter of normal saline should be given before beginning parenteral potassium therapy.

Other nutritional needs must be considered. Until oral feeding is started, 2 or 3 liters of 5% amino acid solution may be given parenterally in 5% dextrose. Also, 10 mg. of thiamin, 50 mg. of nicotinic acid, 500 mg. of ascorbic acid, and 10 mg. of vitamin K are advisable.

Enzymes in Abdominoperineal Resections

OLIVER H. BEAHRS, M.D., AND GEORGE L. JORDAN, JR., M.D.

IF streptokinase and streptodornase are used postoperatively, primary closure may be done of posterior wounds after combined abdominoperineal resection for malignant lesions of the rectum and lower colon. Employment of the enzymes obviates need of a large pack to obliterate the dead space in the hollow of the sacrum.

Intraabdominal pressure pushes the peritoneal floor into the large cavity created by the resection. The enzymes help keep the space free of serum and blood and facilitate adherence of the peritoneum to the surrounding structures.

Though ligation of bleeding vessels is more time-consuming than use of a pack, convalescence is faster and the need for constant dressings is eliminated, declare Oliver H. Beahrs, M.D., and George L. Jordan, Jr., M.D., of the Mayo Foundation, Rochester, Minn.

During closure, 2 or 3 Penrose drains and a 14 F urethral catheter are brought out through the midportion of the incision. If sacral oozing cannot be controlled by ligatures, a small pack may be used, to be removed in forty-eight hours, when a urethral catheter is inserted into the presacral space.

Postoperatively, 2 gm. of dihydrostreptomycin, 0.5 gm. four times daily, and 600,000 units of procaine penicillin are given daily.

Seventy-two hours postoperatively, 100,000 units of streptokinase and 20,000 units of streptodornase in a total volume of 20 cc. are injected into the urethral catheter. The patient lies supine and remains so for four to six hours to allow the solution to puddle in the hollow of the sacrum. The process is repeated every other day for 4 to 6 instillations, after which drains and catheter are removed.

Use of streptokinase and streptodornase in the primary closure of the posterior wounds following combined abdominoperineal resections for malignant lesions of the rectum and lower part of the colon. Proc. Staff Meet., Mayo Clin. 27:241-245, 1952.

A jejunal food pouch and Roux-Y procedure lessen physiologic problems after total gastrectomy.

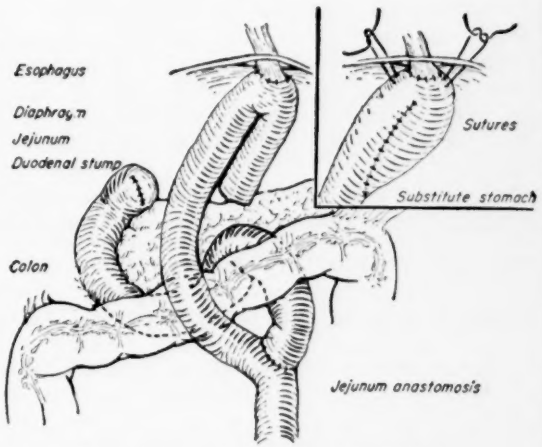
Construction of a Substitute Stomach

CLAUDE J. HUNT, M.D.

Research and Memorial hospitals, Kansas City, Mo.

AFTER total gastric resection, a pouch constructed from the jejunum provides an adequate food reservoir and a Roux-Y anastomosis prevents reflux into the esophagus.

The complete removal of the stomach for carcinoma has consequences related to nutritional deficiency, weight loss, anemia, and esophagitis, states Claude J. Hunt, M.D. Various methods of anastomosis of the small bowel to the esophagus have been used to diminish some of these problems. Although the resection is a doubtful curative procedure, much discomfort in the postoperative months can be eliminated by the formation of a new food pouch.



Formation of pouch from jejunal loop

After the stomach, great omentum, and spleen are removed and the duodenal stump is closed, the jejunum is divided between clamps about 30 to 35 cm. below the ligament of Treitz. The distal limb of jejunum is brought up anterior to the colon, and the end is doubled back upon itself in a side-to-side manner for about 15 cm.

The sides of the loops are sutured together, and an anastomosis with a full-length stoma is made, the transected end of the jejunum being incorporated in the anastomosis. A large pouch is thus formed which is then anastomosed to the esophagus by interrupted silk sutures and continuous 00 chromic surgical gut. The pouch is further supported by sutures to the diaphragm and surrounding peritoneum to relieve tension.

Construction of food pouch from segment of jejunum as substitute for stomach in total gastrectomy. Arch. Surg. 64:601-608, 1952.

The proximal jejunum is anastomosed to the side of the distal jejunum, well below the pouch (see illustration). The esophagus is so vulnerable to bile and pancreatic juice that the Roux-Y procedure should be employed in any type of operation in which the stomach is entirely removed.

A Levin tube, which has been in the esophagus, is passed down through the pouch, well into the jejunum below the Roux-Y anastomosis. The tube is left in for about nine days postoperatively and is useful for administering fluid and feedings.

The technic has been used in 7 consecutive cases without mortality or undue morbidity. No leaks at the anastomoses have been noted. Reflux esophagitis has not occurred, and all patients have taken progressively more food with the passage of time and have made slight gains in weight.

Cures with total gastrectomy for carcinoma are not numerous because of the usual great extent of the lesion at the time of surgery. The procedure does provide an adequate pouch for food intake, lessens the requirements for frequent feedings, provides facilities for a balanced diet, diverts the duodenal contents, and alleviates the incidence of reflux of gastric juice into the esophagus.

Surgical Scrubbing Technic

ANDREW J. CANZONETTI, M.D., AND MARION M. DALLEY

EFFECTIVE preoperative scrubbing can be completed in about five minutes with 3 apparently nonallergic compounds: a detergent cream, synthetic phenol, and aqueous Zephiran.

After soaking in tap water, the surgeon's hands and forearms are rubbed for one minute with pHisoderm containing 3% hexachlorophene, known as G-11. Surfaces are then scrubbed for three minutes, using the same cream and a firm brush, with special attention to regions such as the fingernails and interdigital webs.

The skin is rinsed in running water for one minute and finally immersed for one minute in 1:1,000 solution of Zephiran hydrochloride. The scrubbed areas are dried with a sterile towel, except for a rim left wet above the elbow to prevent contamination.

The method produced no allergy in more than a year's employment at the New Britain General Hospital, New Britain, Conn. Andrew J. Canzonetti, M.D., and Marion M. Dalley obtained much lower bacterial counts from scrubbed areas than after the classic ten-minute soap and water technic, with or without a Zephiran soak, or after use of pHisoderm and G-11 without Zephiran.

Bacteriologic survey of scrub technics with special emphasis on pHisoderm with 3 per cent hexachlorophene. Ann. Surg. 135:228-233, 1952.

Decompression of the bowel from below may promptly relieve sigmoid volvulus if the circulation is intact.

Treatment of Sigmoid Volvulus

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DAN B. GREER, M.D.
Veterans Administration Hospital, Cheyenne, Wyo.

THE proctoscopic intubation of the obstructed loop of bowel, with later elective resection of the redundant gut, is an efficient method of therapy for sigmoid volvulus, provided diagnosis is assured and the bowel is not strangulated.

Extreme abdominal distention is the typical sign of sigmoid volvulus. If the abdominal wall is relaxed, the ballooned sigmoid loop may be traced rising from the pelvis and extending high into the abdomen. Percussion over this loop elicits a variable note.

Hyperperistalsis is noted unless strangulation or peritonitis appears. If the circulation is compromised, great tenderness may appear over the loop.

Pain is an early and prominent symptom and usually continuous, at first localized to the umbilical region or left lower quadrant.

A scout film of the abdomen reveals tremendous distention of the sigmoid flexure and accumulation of fluid. The two points of obstruction at which the bowel is twisted may be revealed; these are never seen with obstruction from cancer unless two lesions coexist. The two parts of the distended coil usually are expanded uniformly, again unlike the condition seen with cancerous involvement.

Barium enema examination ordinarily demonstrates a spiral narrowing at the point of obstruction.

If doubt exists as to the adequacy of bowel circulation, operation must be done. A silent abdomen, great abdominal tenderness, fever, and leukocytosis are all indications for intervention.

The technic for decompression used by Norman H. Isaacson, M.D., and Dan B. Greer, M.D., consists of insertion of the proctoscope as far as the site of torsion with the aid of careful inflation of the rectum. Proctoscopic study will show the condition of the bowel, blood supply, and mucous membrane. The latter may be such that insertion of a tube is too dangerous.

When the site of torsion has been located and well lubricated, a soft rubber rectal tube, 60 cm. long and about the thickness of a finger, is guided up past the obstruction. Force is never used. Flatus and thin stool are usually evacuated with instant relief. When intubation fails, immediate laparotomy is necessary.

The conservative treatment of the acute form of sigmoid volvulus. Surgery 31:544-551, 1952.

Barium enema is less traumatic than surgery in reducing intussusception and often is all that is required.

Hydrostatic Pressure for Intussusception

MARK M. RAVITCH, M.D., AND RUSSELL H. MORGAN, M.D.
Johns Hopkins University, Baltimore

FOR infants and children, hydrostatic pressure is the preferred method of reducing intussusception.

Mark M. Ravitch, M.D., and Russell H. Morgan, M.D., consider barium enema reduction a procedure to be used by surgeons with a roentgenologist cooperating. The decision to employ the method and to persist or desist must remain with the surgeon designated to operate if required.

As soon as the diagnosis of intussusception is made, the operating room is readied. Meanwhile the enema reduction is attempted. If the child has been vomiting or is distended, gastric aspiration is done also. Appropriate fluids for shock or dehydration are started. These measures compensate for the short delay entailed if surgery eventually proves necessary. Moreover, in such cases, the invariable reduction of the intussusception to the cecum makes up for any time lost with the enema.

A Foley catheter without lubricant is inserted rectally and the buttocks are tightly taped. Anesthesia or sedation is usually unnecessary.

Barium flows by gravity from a can 3 to 3½ ft. above the fluoroscopic table. Factors in success are tightly compressed nates without release to maintain hydrostatic pressure and unimpeded barium flow through the tubing.

Reduction may be swift but is sometimes stubborn, with delay at splenic or hepatic flexures and the cecum. In any case, the abdomen should not be touched since instances of bowel rupture are usually associated with manipulation through the abdominal wall. If reduction reaches an impasse, the barium may be expelled and the process repeated once or even twice.

Reduction is diagnosed by free filling of the small bowel, disappearance of the mass, passage of feces or flatus by rectum, and obvious improvement of the child's condition. Charcoal instilled into the stomach and recovered by enema six hours later further confirms reduction.

If reduction is incomplete or the terminal ileum does not fill rapidly and with ease, the abdomen should be opened promptly.

Of 57 intussusceptions observed, 42 were reduced by barium enemas alone and 15 were partially reduced but required operation for completion.

Objections that the procedure is

Reduction of intussusception by barium enema. Ann. Surg. 135:596-605, 1952.

blind, that causative lesions may be missed, or that rupture of gangrenous bowel is likely are answered when considering that swelling and adhesions producing gangrene cannot be reduced by enema. Recommended pressures are insufficient to reduce gangrenous intussusception and rupture does not occur from enemas alone, since pressure is not exerted on gangrenous bowel parts of an unreduced intussusception. The procedure is not blind when fluoroscopy is used; causative lesions such as polyps or Meckel's diverticula are seldom missed.

If the intussusception recurs, operation is indicated after barium to seek possible focal lesions.

Barium enemas observed fluoroscopically are superior to saline enemas because diagnosis is confirmed and progress of reduction easily ascertained.

Unusual Features of Acute Pancreatitis

ROBERT J. COFFEY, M.D.

ABDOMINAL trauma or surgery can produce acute pancreatitis. Blows from boxing, night sticks, auto accidents, or falls crush and tear the pancreas; bullets and knives lacerate.

Such violence was responsible in 7 of 135 cases of acute pancreatitis studied by Robert J. Coffey, M.D., of Georgetown University, Washington, D.C. The disease complicated gastric surgery in 10 patients, 4 of whom died. Occlusion of pancreatic ducts by inverted duodenal stumps, transduodenal exploration of the common duct, gastrectomy, and cholecystectomy is sometimes followed by pancreatitis.

The usual abdominal pain, vomiting, and elevated serum amylase with pancreatitis may be accompanied by unusual features. Hyperlipemia with milky serum can persist for weeks and may be related to a fat-utilizing substance elaborated by the healthy pancreas.

Left pleural effusion, sometimes requiring thoracentesis, may occur with acute pancreatitis. The aspirated fluid contains significant amounts of amylase.

Hemorrhage in the pancreas and at remote sites may represent the digestive action of trypsin upon blood vessels. Hematemesis, melena, purpura, or extravasation of blood into the mediastinum and abdominal wall is seen with pancreatic disease. Excessive blood loss is most likely in the peritoneal cavity and may account for some fatalities.

Although paralytic ileus is common with acute pancreatitis, mechanical ileus is an infrequent manifestation.

Unusual features of acute pancreatic disease. Ann. Surg. 135:715-720, 1952.

Surgical-enzymatic procedures hasten processes of sterilization and repair in refractory foot ulcers.

Enzymes for Chronic Foot Infection

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SURGICAL incisions with instillation of streptococcal enzymes are of great value in treating chronic refractory ulcerations of the feet involving bones and joints.

Streptokinase and streptodornase are enzymes produced by hemolytic streptococci grown in bacterial culture media. Streptokinase causes the rapid lysis of solid clots and coagulums of human blood, while streptodornase acts on desoxyribose nucleoprotein, which comprises the major part of the solid sediment of purulent exudates. Varidase contains the two enzymes in a highly concentrated purified powder form.

For beneficial results, W. Ross McCarty, M.D., and William S. Tillett, M.D., insist that Varidase in solution be in direct and sustained contact with the total area of disease. The length of time that the contact must be sustained depends upon the size of the involved area, since the enzymatic action is self-terminating. Small areas of soft tissue ulceration holding only a few cubic centimeters require reapplication of the solution every one to four hours.

Thorough aspiration or drainage must be done after the process of thinning by liquefaction. In closed areas, the enzymes temporarily increase the amount of fluid by a combination of both liquefaction and irritation. Some distention may be caused, which is either prevented or promptly relieved by aspiration. Ingenious means are often necessary to initiate proper instillation and drainage in poorly accessible areas.

One treatment may not abolish all the exudative debris or fibrin deposits, and repetitions of instillations and drainage may be necessary.

Varidase is effective in the management of chronic refractory ulcers of the feet, with or without osteomyelitis, resulting from diabetes or arteriosclerosis. The initial surgical procedure consists in freely opening the areas of infection by single or multiple incisions. All necrotic tissue is radically excised, and any sequestra are removed.

Polyethylene tubes 2 mm. in diameter are inserted, one into the dorsolateral aspect of the foot for instillation, and another in the sole of the foot for drainage. The tubes are fixed in situ, and the wound edges loosely approximated by interrupted sutures.

Vials of Varidase powder, con-

Streptokinase-streptodornase in chronic infections of feet involving bones and joints. S. Clin. North America 32:405-417, 1952.

taining 100,000 units of streptokinase and 60,000 units of streptodornase, are put into solution in 20 to 30 cc. of physiologic salt solution or with preparations of intravenous aureomycin buffered with sodium glycinate. A 500-mg. vial of aureomycin is diluted to 50 cc. with physiologic salt solution, which in turn is used as a solute for the Varidase. The solution loses enzymatic potency rapidly and must be prepared daily. Systemic penicillin is given routinely.

The area involved is filled to capacity. The process of instillation and drainage is repeated every four hours continuously for three to seven days or longer. Drainage is accomplished by gravity or by gentle suction with syringe or motor. The patency of the tubes should be checked frequently. If the ulcer is shallow and without osteomyelitis, the foot may be submerged in the solution or the area sealed by rubber dam.

As the enzymatic cleansing proceeds, any remaining necrotic connective, tendinous, or muscle tissue must be secondarily excised, since the agents will not act on such substances. Other incisions are necessary if all the affected area has not been laid open to the solution.

When the initial treatment is successful, pain decreases noticeably, usually within the first two days. After the tubes are removed, the sites of insertion close spontaneously and walking can be done without discomfort. Recalcification of previously damaged bone may occur and pieces of sequestrum be absorbed. In spite of apparent impaired vascularity of the foot from the underlying disease, the rate of repair in successfully treated instances does not appear to be deterred.

Enzymatic therapy was used for 11 elderly diabetic or arteriosclerotic patients with chronic infections of the feet, including 8 with osteomyelitis; 6 recovered after seven to nine days of treatment. Secondary surgical management and additional enzymatic instillations were needed for 3 others. The therapy failed in 2 cases and below-the-knee amputation became necessary.

¶ CANCER OF THE RECTUM or rectosigmoid may be diagnosed by sponge biopsy. The method is easy to use in the office and is sometimes successful in revealing cancerous cells when surgical biopsy is not. Sidney A. Gladstone, M.D., of the New York Polyclinic Medical School, New York City, uses cellulose or gelatin sponge in ½-in. squares, ⅛ in. thick, held in long straight uterine forceps or a specially designed type. The suspected ulcer or mucosal area is observed by anoscope or proctoscope and cleansed. Necrotic tissue is removed by dry cotton gauze, and both sides of several sponges are rubbed over the lesion until soaked with tissue fluids. Material is placed in 10% formalin and processed like a block of tissue.

Am. J. Surg. 83:664-670, 1952.

New agents for sterilization of the intestines make the open method feasible for all gastrointestinal surgery.

Modern Concepts of Intestinal Antisepsis

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ANTIBACTERIAL agents effective in the gastrointestinal tract are either bacteriostatic or bactericidal.

The most useful bacteriostatic compounds are sulfasuxidine, sulfathalidine, and phthalylsulfacetimide. After treatment with these drugs, certain organisms remain in the gastrointestinal tract, for example, *alpha Streptococcus faecalis*. This organism is ordinarily nonpathogenic and, by remaining in the tract, may prevent the growth of undesirable higher plant forms.

The bactericidal agents, which include several antibiotics, eliminate organisms from the gastrointestinal tract much more rapidly than do the bacteriostatic materials. The most effective antibiotic for modifying the intestinal flora before surgery, states Edgar J. Poth, M.D., is neomycin.

Neomycin is fairly toxic when given parenterally but the amount absorbed when taken by mouth is so low that not a single toxic reaction has been observed from administration of this antibiotic to 350 individuals for periods as long as three months. In most instances neomycin will entirely eliminate bacteria from the gastrointestinal tract in twenty-four hours. Yeast then grows out in large numbers but does not cause the infection or ulceration of the gastrointestinal tract that occurs when other antibiotics are used.

An antibacterial agent to serve as a practical intestinal antiseptic should have the following properties:

- **Low toxicity**
- **Broad bacterial spectrum**
- **Not destroyed by digestive ferments**
- **Prevention of development or overgrowth of resistant bacterial forms**
- **Rapid action**
- **Limited absorption from gastrointestinal tract**
- **Action in presence of foods and other foreign substances**
- **Of value in mechanical cleansing of bowel without causing dehydration**
- **Nonirritating to gastrointestinal tract**
- **Effective at low dosage**
- **Soluble in water**

In 10% of cases neomycin fails to inhibit the growth of *Aerobacter aerogenes*. A combination of neomycin and sulfathalidine overcomes this problem, without danger of antagonism between the two agents. However, antagonism apparently does exist between bacitracin and neomycin, in that bacitracin almost completely inhibits the bactericidal and intestinal antiseptic action of neomycin in dogs whenever the

Modern concepts of intestinal antisepsis. Am. Surgeon 18:572-578, 1952.

two substances are administered together.

Other antibiotics have been tested for bactericidal effect on intestinal bacteria but for various reasons are inadequate. Streptomycin and dihydrostreptomycin are unsuitable because of the rapidity with which resistant forms grow. Aureomycin is quite effective in eliminating most bacteria from the gastrointestinal tract but has the undesirable property of causing nausea, vomiting, and diarrhea in many patients being prepared for surgery. In addition *Monilia* infections occur after the administration of aureomycin. Terramycin is unsatisfactory because of consequent development of bloody diarrhea and ulceration in the intestines, probably from yeast infection.

Neomycin, sulfasuxidine, sulfathalidine, and streptomycin, given singly or in combination, do not interfere with the healing processes of bowel tissues.

Profound retardation of growth of bacteria in the intestinal tract in theory interferes with local synthesis of vitamin K with subsequent prothrombin deficiency. This is not a problem if the patient is eating adequately.

In instances of urgent surgery the intestinal tract cannot be prepared before operation. However, 1,000 cc. of 1% neomycin solution can be instilled into the gastrointestinal tract and within forty-five minutes no organisms can be cultured. Not more than 100 cc. of the solution should be spilled into the peritoneal cavity.

Phlebectomy for Thrombophlebitis

LOUIS G. HERRMANN, M.D.

In superficial venous thrombosis, the real danger lies in the possible spread of the process to the deep veins of the affected extremity. Therefore, complete excision of the involved vein should be performed in the early stages before organization of blood clots and cellular reaction around the veins become widespread, believes Louis G. Herrmann, M.D., of the University of Cincinnati.

The patient with thrombophlebitis has a painful, firm lump along the course of the long saphenous vein. The branches of the saphenous vein should be ligated and divided and the long saphenous vein tied close to the femoral vein. The entire saphenous vein and the enclosed blood clot are removed by sharp dissection through multiple "buttonhole" incisions. All tributaries or perforating veins are ligated with fine silk.

In the acute stage when perivenous edema exists, the veins can be shelled out with little effort or trauma to the surrounding tissues.

Phlebectomy in treatment of acute thrombosis of saphenous varices or veins. Arch. Surg. 64:681-685, 1952.

Esophageal irritation from acid-pepsin can produce the sequence of esophagitis, ulceration, and stenosis.

Benign Stenosing Esophagitis

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INFLAMMATION of the esophagus with stenosis can be produced by the reflux of gastric juice associated with vomiting and intubation. A combined anatomic-physiologic form of treatment will produce good results.

Inflammatory stenosis from an endogenous source can usually be explained by the sequence of esophagitis, ulceration, and stenosis resulting from the action of acid-peptic gastric juice in the lower esophagus, state Lockert B. Mason, M.D., and John R. Ausband, M.D. Irritation of the esophageal mucosa by gastric contents has been proved experimentally, and clinical evidence of reflux of gastric content into the esophagus has been established.

Reflux of barium from the stomach to the lower third of the esophagus occurs but does not fill the entire esophagus. Such reflux is found most frequently with a gastrointestinal disease. Vomiting and eructation or passage of a stomach tube, or both, associated with chronic cholecystitis or peptic ulcer was the course of events in nearly half the autopsied cases of esophagitis.

The mechanism of maintenance of cardioesophageal continence permitting entrance, but not exit, of solids and liquids is complicated and variable. Increased intragastric pressure from a pressure dressing on the upper abdomen may cause reflux of gastric juice through the esophagogastric junction held partially open by a tube. Recurrent vomiting and gastrointestinal lesions may have been present for years without esophagitis; postoperative gastric retention and intubation may well be the insult that initiates the process.

Stenosing esophagitis occurs in both sexes and in all age groups. The diagnosis is made from roentgen examination with barium and esophagoscopic study. Dysphagia, especially if associated with peptic ulcer, gallbladder disease, or gastric intubation, is strongly suggestive of the condition.

The majority of benign strictures and stenotic areas are found in the lower half of the esophagus, mostly in the terminal third. The location is in agreement with the acid-peptic concept of origin, since this area is the most frequently exposed to concentrated gastric juice. Occasionally the involved segment is quite long.

Treatment may be direct or indirect. The direct approach attempts

Benign stenosing esophagitis associated with vomiting and intubation. Surgery 32:10-16, 1952.

to restore an adequate pathway and includes dilatation, resection, and plastic procedures. The latter are not possible when the involved segment is long. Esophageal resection with esophagogastrostomy may be followed by stenosis above the anastomosis if reflux persists. Resective operations seem unduly destructive for a lesion which is reversible after the acute precipitating factors are removed.

The indirect approach is physiologic and aims to reduce the acid-peptic regurgitation. Subtotal gastric resection produces successful results in stenosing esophagitis. The operation cannot establish the benign nature of a doubtful lesion, however, without thoracotomy and should be reserved for cases with no reasonable suspicion of cancer.

A combination of indirect and direct methods can be used successfully if the actual nature of the lesion is yet to be established. Physiologic rest and neutralization of acid-pepsin are accomplished by gastrostomy with frequent feeding. Benignancy of the lesion may be proved by thoracotomy and excision of a long, thin, wedge-shaped piece of tissue including all layers taken from the longitudinal plane of the esophagus. An adequate pathway is obtained by dilatation. With removal of acute stimuli and eradication of gastrointestinal disease, such as chronic gallbladder disease, permanent relief is likely.

Reaction to Absence of Physician

HENRY H. BREWSTER, M.D.

WHEN a physician leaves his practice even briefly, as for a vacation, his patients may have distressing if temporary exacerbations of symptoms.

Comparing this response to the effects of actual bereavement, Henry H. Brewster, M.D., of Harvard University, Boston, has observed that neurotic manifestations worsen and psychosomatic disorders such as vomiting, ulcerative colitis, and rheumatoid arthritis flare up during brief interruptions of therapy. The reaction to separation is more severe among the psychosomatic group than among the neurotic.

The patient has subjective feelings of loss, irritability, preoccupation with the missing therapist, and inability to initiate and maintain useful activities. The more dependent the patient's personality, the more prone to this phenomenon. Any departure by the physician, however temporary, should be viewed as a potential stimulus to the reaction. The patient should be prepared by being warned well in advance.

Separation reaction in psychosomatic disease and neurosis. Psychosom. Med. 14:154-160, 1952.

Addiction to amphetamine in the sense of compulsion to continue taking the drug does occur, but is infrequent.

Amphetamine and Addiction

PETER HOBART KNAPP, M.D.
Boston University

THE autonomic nervous effects of amphetamine are slight, as are those of other sympathomimetic drugs, but the central actions of the drug are much more profound.

Using a broad concept of the term, addiction to amphetamine can be said to occur, but is not accompanied by great physical dependence or disabling physical consequences. In spite of the prominence and ease of availability of amphetamine for the past fifteen years, cases of unequivocal abuse are rare, finds Peter Hobart Knapp, M.D.

Most individuals continue to work effectively for a surprising length of time while taking relatively large amounts of the drug. Amphetamine may be less harmful than and serve as a replacement for other stimulants, particularly alcohol, or narcotics.

Addicts use the drug in combination with other agents, particularly barbiturates. Addiction to amphetamine alone is infrequent and, in comparison with other addictive states, is relatively benign. While taking amphetamine, some unstable personalities have broken down, but others stay at least as well as before the addiction.

Examination of the case material reveals the nature of the stimulation produced by amphetamine. The psychic effects of chronic ingestion are those of a single dose but are extended in duration. The effects include periodic tension, increased verbal activity, insomnia, and depression of appetite as revealed by sudden obesity in 2 patients when the drug was stopped. As to mood, the patients frequently describe optimism and energy, rather blissful exaltation, and show a push toward action.

Among the cases reviewed, levorotatory with, at times, dextrorotatory amphetamine was used for periods of time up to fifteen years. After continued usage, psychic dependence and a compulsion to take the drug developed. Dosage remained between 20 and 30 mg. daily in about one-fourth of cases, but reached 700 mg. daily in 1 case. Although periodic autonomic side-effects appeared, no clear-cut hypertension or other physical disability persisted. Except for somnolence, possibly from exhaustion, withdrawal phenomena were not observed.

Addicts demonstrate some disorganized personality trends, such as lying and drug pilfering by a nurse, and an episode of kleptomania in another addict. However, most of

Amphetamine and addiction. J. Nerv. & Ment. Dis. 115:406-432, 1952.

the individuals live in the shadow of a very strict conscience and amphetamine apparently helps conformation and obedience. In addition to delinquent impulses, the patients had disintegrating passive yearnings, leading to chronic depression, but they also had the capacity to combat depression. The patients usually started to use amphetamine while attempting to meet a crisis—a severe personal loss in 2 cases, and job responsibilities almost beyond capacity in 2.

All the patients were extremely isolated individuals, who were preoccupied with food, sleep, death, and longings for maternal care to the exclusion of mature relationships. The group as a whole spoke of how amphetamine helped them to make contact with people; what they established was a tenuous, almost pseudo-contact.

Specific Treatment of Syphilitic Aortitis

R. H. KAMPMEIER, M.D., AND HUGH J. MORGAN, M.D.

PENICILLIN has made specific treatment for cardiovascular syphilis easy to give and practically does away with dangerous reactions. An office course can be completed in a few days.

If administered in the acute or latent stage of syphilis or during simple aortitis, the drug will probably prevent aortic insufficiency, aneurysm, and closure of coronary ostia. Early aortic complications may be reversed but established lesions such as aortic valvular insufficiency or saccular aneurysm are no more affected than by older methods.

R. H. Kampmeier, M.D., and Hugh J. Morgan, M.D., employed penicillin in 34 cases of cardiovascular syphilis at Vanderbilt University Hospital and Thayer Veterans Administration Hospital, Nashville, Tenn.

In preparation for an intensive course, bismuth and iodide may be given for several weeks, or small doses of penicillin for several days, although neither is obligatory.

From 4,800,000 to 6,000,000 units of procaine or aqueous penicillin is injected in eight to ten days. The procaine penicillin is given in single daily doses of 600,000 units; the aqueous penicillin is divided into 6 to 8 injections per day. Doses 2 or 3 times as large and longer periods of treatment may be employed. If slow absorption is desired, 600,000 units is given intramuscularly twice a week for six weeks.

Treatment is well tolerated with any type of lesion and with or without congestive heart failure.

The specific treatment of syphilitic aortitis. Circulation 5:771-778, 1952.

The anesthetist and internist have a useful additional agent in procaine amide, a derivative of procaine.

Value of Procaine Amide

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SAFER and more convenient to administer than procaine is a derivative, procaine amide.

Action is more prolonged than with procaine, making repeated or continuous dosage not necessary. Treatment can be oral as well as intravenous, and no serious toxicity has been observed.

The drug may prevent or reverse ventricular tachycardia and other arrhythmias during operation. The amide relieves pyloric spasm, pruritus, myositis and fibrositis, but not pain caused by advanced malignant disease.

Disadvantages of the amide are difficulty of establishing the protective dose for each individual, unexpected results, and occasional total failure of therapy.

Procaine is the hydrochloride salt of the ester of para-aminobenzoic acid with diethylaminoethanol. When the ester link is replaced with an amide group, procaine amide results.

The amide is a white to tan crystalline powder soluble in acidified water or alcohol. Capsules are used for oral dosage, and a fairly stable 10% solution is put up in a nitrogen atmosphere for parenteral use.

Taken by mouth, the drug is absorbed quickly and well from the gastrointestinal mucosa. In the body, plasma levels fall only 10 to 15% per hour, and 60% is excreted unchanged in urine.

Like procaine, the derivative will reduce cardiac irritability, lengthen the refractory period, slow the heart, and increase cardiac filling.

Procaine is hydrolyzed rapidly in plasma. An intravenous injection of 120 mg. disappears so fast that none can be recovered two minutes later. The central nervous system at times reacts with manifestations such as twitching, convulsions, and respiratory or circulatory depression.

However, no cerebral stimulation results with procaine amide, and the most serious untoward effects are infrequent vertigo, nausea, vomiting, and syncope from transient hypotension. Blood pressure falls less than with procaine.

Widest utility of procaine amide probably lies in ventricular disturbances of heart action, for example, premature contractions and tachycardia, believe Max S. Sadove, M.D., Gordon M. Wyant, M.D., Henry E. Kretchmer, M.D., and

Procaine amide: a clinical study. Current Researches in Anesth. & Analg. 31:45-57, 1952.

Lloyd A. Gittelson, M.D. Control of tachycardia may be followed by auricular fibrillation, as after spontaneous remission. Occasionally, supraventricular arrhythmias are improved.

Even in normal hearts, the drug generally prolongs the QRS complex and QT interval slightly, and the T wave is temporarily flattened, notched, or inverted. The P wave may be widened and depressed, and in extreme instances nodal rhythm is induced.

In the treatment of arrhythmias during anesthesia, procaine amide should be diluted to a 2% solution.

Since large amounts may be hazardous, correct dosage should be estimated under electrocardiographic control, whenever possible. Injection of 400 mg. or more may be required, yet 300 mg. or less may cause trouble.

When 3 to 6 gm. of procaine amide per day was given orally for ten days to 8 subjects with advanced cancer, no significant changes developed in blood pressure, pulse rate, temperature, or respirations. Blood and functions of liver and kidney were unaffected.

Intractable pain is not obviously decreased but, as a rule, analgesia is satisfactory in other types of disorder, including myositis, fibrositis, and pruritus. Nausea, vomiting, and hiccups may also be relieved.

¶ **SPINAL ANESTHESIA** for upper abdominal surgery and for procedures requiring low anesthesia may be achieved with a single subarachnoidal injection of 2-chloroprocaine. More potent and less toxic than procaine, 2-chloroprocaine is also useful for regional nerve blocks and dental anesthesia. For spinal anesthesia, Francis F. Foldes, M.D., and Pearl G. McNall, M.D., of the University of Pittsburgh use 3 cc. of a 3.3% solution of 2-chloroprocaine in 10% dextrose for levels above the twelfth thoracic segment, and 2.5 cc. for lower levels. Within these dosage limits, the desired height of anesthesia is obtained by varying the site of puncture between the second and fourth lumbar interspace and changing the plane of the operating table. When anesthesia for longer than sixty minutes is desired, addition of epinephrine to a final concentration of 1:5,000 is effective. With 2-chloroprocaine, sensory anesthesia usually persists for ten minutes after return of motor function. The correct dosage for a regional nerve block depends upon the location. For the brachial plexus, 40 cc. of a 2% 2-chloroprocaine solution is necessary for one hundred and ten minutes of anesthesia. A paravertebral block lasting seventy minutes is accomplished with 4 cc. of the 2% solution; 2 cc. of a 2% solution of 2-chloroprocaine provides dental anesthesia for twenty minutes. High potency and low toxicity combined with rapid absorption and destruction give 2-chloroprocaine a high therapeutic index.

Anesthesiology 13:287-296, 1952.

Knowledge of anesthetic agents and technics and evaluation of the patient are essential in cardiac cases.

Anesthesia in Cardiac Disease

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COOPERATION between cardiologists, surgeons, and anesthesiologists increases the likelihood of survival when operation is complicated by decreased cardiac reserve, observe Robert D. Dripps, M.D., and Leroy D. Vandam, M.D.

EVALUATION OF PATIENT

The cardiologist should evaluate the cardiac status and decide when the heart is in the best condition for surgery. The anesthetist must alleviate the patient's apprehension, study the body habitus for possible ill effects from the anesthesia, review the patient's previous experience with anesthesia, and test in advance reaction to the position required for operation. The surgeon assesses the degree of muscular relaxation required, the estimated length of the procedure, the position desired, and adjusts the fluid and electrolyte balance.

AGENTS AND TECHNICS

Cyclopropane is an extremely useful anesthetic agent for cardiacs because of potency, smoothness, and rapidity of induction and emergence, and prompt controllability. A rise in arterial, central venous, or right auricular pressure may occur during anesthesia, together with a decreased arteriovenous oxygen difference and abnormalities of cardiac rate and rhythm. The blood pressure may decline below preoperative levels at the conclusion of anesthesia.

Evident arrhythmias usually occur only with a trigger mechanism initiated by epinephrine. Small amounts of ethyl ether with the cyclopropane reduces the incidence of ventricular tachycardia.

Ethyl ether has a wide margin between the concentrations necessary to produce respiratory and circulatory failure. Fluctuations of blood pressure are much less common than with other anesthetics. A prolonged induction is occasionally required, and unskilled administration may be conducive to increased respiratory secretions, swallowing of ether-laden mucus, anoxia, and carbon-dioxide retention.

Nitrous oxide causes little postoperative functional disturbance. Combined with an opiate or barbiturate for increased potency, the agent is useful in operations not requiring muscular relaxation.

The outstanding advantage of *Pentothal* for the cardiac patient is the smooth induction afforded. Tachycardia and hypotension may ensue if an attempt is made to

The anesthetic management of patients with heart disease. Circulation 5:927-936, 1952.

reach deeper planes of anesthesia. When muscular relaxation is required, the addition of a curare compound is often essential but must not be used indiscriminately because profound degrees of respiratory depression occasionally result postoperatively.

Spinal anesthesia produces superb muscular relaxation and exerts a profound effect upon the circulation. Peripheral resistance decreases and blood pools on the venous side of the circulation, resulting in decline of cardiac output. Coronary insufficiency may develop if the vessels are unable to adjust to the diminished flow.

Hypotension, pain, nausea, dyspnea, and emotional upset can follow intraabdominal manipulation during *regional* or *local anesthesia.* The epinephrine frequently added is a powerful cardiac stimulant and may induce coronary contraction. Local anesthesia is useful for operations on the extremities and body surface in cardiac cases. Supplementation with Pentothal and nitrous oxide or cyclopropane, when indicated, decreases hypotension and subjective discomfort.

CARDIAC ARRHYTHMIAS

Direct laryngoscopy and tracheal intubation should be done with reasonably deep anesthesia to control blood pressure elevation and heart rate. Manipulation near the hilum of the lung, stripping adherent pericardium, or direct approaches to the heart chamber may be accompanied by gross irregularities.

Adequate ventilation throughout the period of induction and maintenance is essential in cardiac patients, since ventricular rhythms are increased in incidence and severity by carbon-dioxide accumulation. Sympathomimetic amines should not be injected unless absolutely essential.

Cardiac depressants, such as quinidine, procaine, and procaine amide, help to prevent cardiac abnormalities by blocking sympathetic inflow to the heart. Such drugs are of use, but the dosage needed to provide protection and to avoid toxic reactions is difficult to predict.

SPECIFIC CONDITIONS

Pregnancy increases the cardiac output and plasma volume, and labor causes steep elevations in systolic and pulse pressures. Most pregnant patients with cardiac disease have had rheumatic fever and the majority of valvular lesions are mitral.

Spinal or caudal anesthesia is useful for vaginal delivery because blood pressure variations are reduced. Venous pressure falls and blood is pooled in the periphery, a distinct advantage with incipient pulmonary edema. The semi-Fowler position should be used for delivery.

Nitrous-oxide anesthesia with local block is a useful combination for less seriously affected cardiac parturients.

Benign essential hypertension which is symptom-free and has persisted for years causes relatively little concern to the anesthesiologist. Even with obvious heart, kidney, or cerebral circulatory damage, operative stress is well borne.

Sodium thiopental is not infrequently used for induction, and the anesthesia is then maintained with ethyl ether. Deliberately produced and controlled hypotension during anesthesia may have merit if tissue nutrition to the heart, brain, and liver can be maintained during the hypotensive period.

General anesthesia is used in intraabdominal surgery if *coronary artery disease* exists. The patient's anxiety must be relieved by personal assurance from the anesthesiologist of knowledge of the condition. Adequate preoperative sedation and smooth anesthetic induction are necessary. Blood pressure should be well maintained, and oxygen administered during the procedure.

Surgical emergencies are rare during acute *congestive heart failure*. Regional anesthesia is used, and the head and thorax are kept elevated. Oxygen may be required. Venous tourniquets and a slow intravenous drip of theophylline ethylenediamine may be advisable for impending or actual pulmonary edema.

The patient with a *patent ductus arteriosus, tetralogy of Fallot,* or *coarctation of the aorta* withstands anesthesia and operation well.

¶ RUPTURED SPLEEN can be diagnosed by serial radiography. The most important changes are increasing size and density of the splenic shadow, downward displacement of the colon at the splenic flexure, and separation of intestinal loops by free blood in the peritoneum. Films made three and fifteen hours after injury of a young man during a baseball game led to successful diagnosis and operation. Other signs noted by George Thomas, M.D., and Harry A. Reinhart, M.D., of Vineland, N. J., and J. Gershon-Cohen, M.D., of Philadelphia were diaphragmatic elevation on the left, dilatation of the stomach, compressed fundus, downward displacement of the cardiac end, and gastric shift to the left.

J.A.M.A. 149:143-144, 1952.

¶ SICKLE CELL ANEMIA should be suspected when the chest roentgenogram of a young Negro shows generalized cardiac enlargement. Thoracic osseous changes and extensive demineralization and coarsened trabeculation of the skeletal system are further indications for the diagnosis. Splenomegaly is present in a significant number: amorphous splenic calcifications were found in 7 of 72 cases studied by Bernard Ehrenpreis, M.D., and Harold N. Schwinger, M.D., of Kings County Hospital, Brooklyn. The vertebral changes—comprising loss of normal height, alteration of the height-weight ratio, biconcave deformity, and a spotty sclerosis of the bodies of the vertebrae—are specific.

Am. J. Roentgenol. 68:28-36, 1952.

Radiocobalt has many medical advantages and undeveloped potentialities but availability is limited.

Medical Uses of Cobalt 60

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MORE suitable for medical uses than radium is the much cheaper isotope cobalt 60, which has superior physical and radioactive characteristics.

Herbert D. Kerman, M.D., finds that radiocobalt has the following advantages over radium:

1] Gamma radiation is simpler, is essentially monochromatic, and does not require filtration.

2] Because the primary and secondary electronic emissions are reduced, less shielding is necessary to avoid local necrosis.

3] A more homogeneous linear source of radioactivity can be prepared without the danger of shifting or localized hot spots in interstitial applicators.

4] The inconvenient powder form of the radioactive material need not be packed into a container, and the magnetic property facilitates handling.

5] Gaseous and inconvenient products of disintegration do not appear, and the radon leakage problem disappears.

6] The hazards of the radioactivity being absorbed and retained are slight, for breakage is eliminated and adequate sheathing can be provided.

7] Such radiocobalt as may be absorbed by the tissues is rapidly eliminated and not stored in the body as is radium.

8] Greater flexibility of treatment is possible with cobalt, for a variety of design, shape, and activity may be obtained easily and cheaply for special problems. In a great many instances, these devices may be fabricated before the material is made radioactive, so that excessive handling of dangerous agents is decreased.

9] High specific activity sources of radiocobalt may be obtained for teletherapy irradiation which will be far superior to large quantities of radium and compare quite favorably with roentgen therapy equipment in the supervoltage range.

The isotope is a suitable agent for interstitial, surface, intracavitary, and teletherapy radiation.

For interstitial radiation, great flexibility and accuracy are permitted in the physical planning of treatment. The needles can be differentially loaded to give additional radiation to special areas of tumor, or distribution of the material can be made surprisingly uniform.

For treatment of the body surface, foil or wires can be fashioned to fit specific needs.

Beads of desired intensity are

Medical uses of cobalt 60. South. M. J. 45:495-500, 1952.

used in such body cavities as paranasal sinuses, nasopharynx, vagina, and bladder. With the bead considered a point source, accurate dosage calculations can be made for the cavity wall at various depths.

Radiocobalt teletherapy units would compare favorably with existing supervoltage roentgen equipment, for the isotope unit will yield the same energy beam as the x-ray generator and have as good or better flexibility, motility, and adaptability to therapy.

The availability of radiocobalt is still limited by higher priorities of reactor time and current pile production methods.

Niacin for Senile Psychoses

IAN GREGORY, M.B.

LACK of nicotinic acid is often a major cause of the psychoses of senility. The vitamin may be effective therapy in many cases, especially if the patient is under 65 years of age.

Ian Gregory, M.B., of the Psychiatric Hospital, Toronto, believes, from a study of 54 subjects, 12 of whom were greatly or significantly benefited by niacin treatment, that a slight chronic niacin deficiency may develop among the elderly because of improper diet, impaired alimentary absorption, or increased metabolic requirements caused by infections. This deficiency may predispose to a senile psychosis, which appears later as the immediate effect of some precipitating cause including a brief but substantial further reduction of niacin intake.

All patients receive an initial dosage of 300 mg. of nicotinic acid three times daily by mouth and 100 mg. daily parenterally. This amount is continued no longer than three months if patients show little response to treatment. If effects are favorable, the dosage is gradually reduced when the greatest possible level of improvement is reached, but a maintenance rate of 100 mg. daily by mouth is continued indefinitely.

Prognosis bears some relationship to the patient's age. Great improvement occurs in about 50% of patients 65 or under, and in but 10% of those over 65. The sooner therapy is begun after the appearance of symptoms, the better the chance of success. If the patient does not become much better within three weeks, the outlook is poor.

Prophylactic use of niacin may benefit elderly people, since irreversible structural changes quickly follow the initial changes in cell function.

Nicotinic acid therapy in psychoses of senility. Am. J. Psychiat. 108:888-895, 1952.

Different types of sore throat present special characteristics which influence indications for treatment.

Modern Therapy of Sore Throat

A. R. HOLLENDER, M.D.
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THE throat with its supply of lymphoid tissue is peculiarly susceptible to infection implanted from neighboring structures or the outer environment.

The two main types of sore throat are [1] those restricted to the site of entry, as for example Plaut-Vincent angina, and [2] forms that progress to utterly different systemic disease, such as anterior poliomyelitis.

Acute infection may be deep, far-reaching, and a source of temporary septicemia, but resolution is the rule, believes A. R. Hollender, M.D. The new antimicrobial agents are outstandingly helpful. By eradication of one process, however, others are often provoked, and additional measures must be employed.

Chronically diseased tonsils in young or old should be removed if possible. Bacteria and other noxious agents are constantly transported to the lymphoid tonsils comprising Waldeyer's ring. Lymphoid tissue is labile, rapidly growing, readily destroyed, and therefore highly vulnerable, frequently becoming a serious liability.

The lymphatic system is a circulatory system secondary only to that of the blood and is an invaluable filtering and defense mechanism. Removal of the tonsils is not always warranted.

Children who have repeated infections of Waldeyer's ring with sore throat and cervical adenopathy may receive radiation in preference to tonsillectomy.

Inoperative chronic tonsillitis in adults is managed by electrosterilization. After local analgesia, each tonsil is given a single puncture, using a coagulating needle and small amount of current. Tissue shrinks and symptoms disappear in a few days.

Tonsils are probably infected when tonsillar crypts, the natural paths of exit for spent cells and bacteria, become obstructed. Nasal organisms may also reach the tonsils by way of the communicating veins.

Having many causes, however, chronic pharyngitis frequently occurs after tonsillectomy. Removal of lymphoid structures as supposed foci of infection usually fails to relieve systemic disease.

Although several ailments may follow acute tonsillitis, the tonsils as such are believed to be unimportant in etiology of rheumatic

The problem of "sore throat" with special reference to modern therapy. South. M. J. 45:619-625, 1952.

fever, rheumatoid arthritis, nephritis, allergic states, upper respiratory infections, and subacute bacterial endocarditis.

The acute epidemic streptococcic sore throat is spread by milk or carriers with no relation to presence or absence of faucial tonsils. Responsible organisms are the Smith and Brown beta hemolytic type or the Schottmüller group. Prophylaxis is the best defense, though disease can be modified by antibiotics.

Most eruptive infections in children cause severe sore throat, but pharyngitis also develops independently and may be exacerbated by faucial tonsils. In diagnosis, a membrane should be sought and laboratory tests done, especially blood examination and cultures.

Adults may have hyperplastic lymphoid tissue, and sore throat is common in old age, with or without faucial tonsils.

Pharyngitis may be traumatic, viral, or the resistant carrier type. Other factors are abscess, tonsillectomy, smoking, psychosis, allergy, blood dyscrasia, fungous infection, or systemic conditions such as tuberculosis or syphilis.

Treatment of acute sore throat still consists of bed rest, relief of pain, and regulation of diet. Gargling, swabbing, and use of lozenges, especially those containing antibiotics, or other local remedies have doubtful or even actually harmful effects.

Penicillin is recommended, particularly for the carrier state, until infection by streptococci is disproved. For viral or other organisms, aureomycin, terramycin, or chloramphenicol may be used with good effect.

Chronic sore throat occurs in several forms. Granular pharyngitis, involving posterior lymphoid patches studded with whitish pustules, may respond to iodides or to chemical or electric cautery. Underlying sinus or other disease should be eliminated.

Lateral pharyngitis with hypertrophic bands and follicles is controlled well by Morrison's flexible radium applicator. The operator should be experienced in the procedure, however.

For atrophic pharyngitis, the patient's physical and nutritional status should be improved, since local therapy is only palliative.

¶ MENSTRUAL DYSFUNCTION, infertility, and habitual abortion are often associated with obesity, perhaps as a result of hypothalamic disease. Joseph Rogers, M.D., and George W. Mitchell, Jr., M.D., of Tufts College, Boston, examined 100 young women with gynecologic dysfunction. Weight 20% or more above standard was observed in 43. Of the group with amenorrhea, the most frequent menstrual disorder, 48% were too stout in contrast to 13% of subjects with normal menses. In several cases, reduction of weight was followed by normal periods.

New England J. Med. 247:53-55, 1952.

Ectopic endometrium, at one time considered a rarity, recently has become a common gynecologic ailment.

Significance of Endometriosis

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Western Reserve University, Cleveland

THE incidence of endometriosis is increasing among private patients. During 1947 the condition was found in 22% of laparotomies of private patients at the Johns Hopkins Hospital, as compared to a 7.5% occurrence in 1933.

A review of all cases seen during the fifteen-year period, 1933-47, shows that the disease is most frequent in patients of 31 to 40 years of age and is often associated with sterility.

Conservative surgical treatment is advisable during childbearing years, while for the patient over 40, R. W. Te Linde, M.D., and Roger B. Scott, M.D., recommend hysterectomy and bilateral salpingo-oophorectomy.

One or both ovaries are involved in 80% of cases. The posterior cul-de-sac is also a frequent site, and the lesions may penetrate the rectal lumen or the posterior vaginal vault. Other sites are the uterine surface, tubal surface and tubes, uterine ligaments, anterior cul-de-sac, omentum, small intestine, sigmoid, bladder, cervix, umbilicus, and old ventral scars.

About 46% of patients had no full-term children; 33.5% had never been pregnant. This incidence of sterility is well above the expected absolute sterility rate of about 10% among married couples.

The majority of women with endometriosis have open tubes but because of edema and fibrosis the tubes do not have normal peristaltic action and are poor conveyors of the ovum. In some incidences, periovarian adhesions prevent ova from reaching the fimbriated ends of open tubes.

Frequent childbearing may inhibit the disease but is certainly not absolute prophylaxis. Almost 25% of the women with term deliveries had 1 or more pregnancies five years or less before the operation for endometriosis.

Abnormal uterine bleeding is not a common symptom of endometriosis alone. Bleeding is often accounted for by other lesions such as myomas and endometrial and cervical polyps. Dysmenorrhea and lower abdominal pain beginning just before or at the onset of menstruation are common symptoms of endometriosis but are not pathognomonic. Almost 27% of the patients,

Diagnosis and treatment of endometriosis. GP 5:61-65, 1952.

including some with extremely extensive lesions, had no abdominal pain. About 25% had typical acquired or increasingly severe dysmenorrhea.

Rectal bleeding and hematuria, occurring at the time of menstruation, may result from invasion of the rectal and bladder walls. Backache, rectal pain, and dyspareunia are not uncommon, and these symptoms doubtless result from the endometriosis.

Ectopic endometrium has no predilection to malignancy over that of intrauterine endometrium. Only 2 of 516 patients showed any evidence of the possible transformation of benign tissue to carcinoma.

After conservative operations, 40.6% of the patients conceived and 31.3% had term deliveries. Subsequent surgery was required for 12.2%. Between the ages of 34 to 40, hysterectomy is desirable, but when the condition permits, 1 ovary is saved. After the age of 40, usually, but not always, hysterectomy and bilateral salpingo-oophorectomy both are done.

Duration of the Second Stage of Labor

L. M. HELLMAN, M.D., AND HARRY PRYSTOWSKY, M.D.

THE first stage of labor cannot exceed twenty hours or the second stage two and a half hours without jeopardizing the infant's life.

To determine safe limits, 13,377 deliveries were analyzed by L. M. Hellman, M.D., and Harry Prystowsky, M.D., of the State University of New York, New York City, and Johns Hopkins University, Baltimore.

The median duration of the second stage is slightly under twenty minutes for multiparas and a little below fifty minutes for primiparas. Borderline pelvic contractions extend the period slightly in primiparas but not in multiparas.

The second stage is retarded by posterior position of the fetal head and more than doubled by persistent malposition.

Duration of the second stage lengthens progressively if the first stage is prolonged up to twenty hours, but not beyond that interval.

Postpartum hemorrhage is increased if either stage is drawn out, particularly the second. Puerperal fever is also more likely with longer labor, but especially in the first stage; however, intrapartum fever is influenced by protraction of the first stage alone.

Infant mortality rises from 0.35 to 2.1% with extension of the first stage from less than five to more than thirty hours, and from 0.25 to 1.5% after delay in the second from thirty minutes or less to more than three hours.

The duration of the second stage of labor. Am. J. Obst. & Gynec. 63:1223-1233, 1952.

Uneventful vaginal delivery after myomectomy does not remove danger of rupture at subsequent pregnancy.

Ruptured Myomectomy Scars in Pregnancy

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State University of New York, New York City

ELECTIVE cesarean section is the safest mode of delivery for a patient with a previous myomectomy encroaching upon the endometrial cavity or for one who had a febrile postoperative course, indicating infection. Infection interferes with healing processes and a weak scar results.

The relatively high rate of cesarean sections done after myomectomies probably explains the apparent low frequency of rupture during postmyomectomy pregnancy.

The length of time between the myomectomy and the pregnancy apparently has no significance as far as rupture is concerned, find Paul Pedowitz, M.D., and Laurence B. Felmus, M.D.

Predisposing factors—The extent and depth of the incision in relation to the endometrium are significant factors predisposing to rupture.

Excision of a subserous or superficial intramural fibroid only slightly disturbs uterine muscular integrity. However, a penetrating incision encroaching upon or entering the endometrial cavity disrupts the continuity of muscle bundles through the entire thickness of the uterine wall and is similar to a classical cesarean section incision.

Damage may be increased during enucleation of multiple fibroids, causing a widespread myometrial scarring. Infection is most apt to occur when enucleation necessitates entering the uterine cavity.

Removal of a deep myoma leads to poor scar formation. In closing the myoma bed, achievement of satisfactory hemostasis may necessitate inclusion of larger amounts of myometrial tissue in each suture than is required for coaptation alone, so that tissue necrosis results. In addition, approximation of respective muscle bundles is virtually impossible because of the ragged condition of the fibers after extensive enucleation. Therefore, considerable scar formation is to be expected.

In the healing of cesarean section incisions, the inexact coaptation of divided muscle bundles, accompanied by collection of blood pockets, often results in the formation of lacunae lined by endometrium. The mucosal surface presents a gutter which may be the site of herniation of fetal membranes at a subsequent pregnancy.

Inclusion of mucous membrane

Rupture of myomectomy scars during subsequent pregnancies. Obst. & Gynec. Surv. 7:305-313, 1952.

in a scar may result in fistula formation between uterine and peritoneal cavities or adenomyosis of the scar. Implantation of the placenta in the area of a myomectomy wound deficient in endometrium may permit trophoblastic invasion of the myometrium, thereby favoring uterine rupture.

Diagnosis and treatment—Tenderness over the uterine scar, especially near term, may indicate impending rupture. Such localized tenderness is particularly significant during labor.

Rupture of the postmyomectomy scar during pregnancy may occur without signs or symptoms, only to be discovered at elective cesarean section. The rent in the uterus may be bloodless, for example, with intact fetal membranes protruding through the defect and enclosing a viable fetus.

Frequently, especially during labor, the uterine laceration is more extensive and is accompanied by intraperitoneal hemorrhage, shock, and general collapse. Fetal heart tones almost always disappear. Often the fetus extrudes into the addominal cavity.

Interpretation of slight symptoms often depends on knowledge of the preceding myomectomy. In case of doubt, exploratory laparotomy is justified, before or during labor. Exploration of the uterine cavity for possible uterine rupture is indicated after vaginal delivery of a patient who previously had myomectomy. Symptoms of a postpartum rupture may not become apparent for several hours.

The treatment for the rupture consists of immediate transfusion and laparotomy. With extensive laceration, supravaginal hysterectomy should be rapidly performed.

Suture of the rent is justified if the defect is small, particularly since many of these patients are primiparas, although the possibility of recurrence at a future pregnancy must always be borne in mind. Tubal ligation should accompany repair of a uterine rupture in a multipara.

¶ SCABIES AND PEDICULOSIS may be effectively eradicated with one application of Gamergent ointment, a nonirritating combination of pesticides. Theodore Cornbleet, M.D., H. C. Schorr, M.D., and Ben Firestein, M.D., of the University of Illinois and Cook County Hospital, Chicago, report relief of itching after several hours, and disappearance of parasites within twenty-four hours, for 62 of 63 patients. Infestation by acarids and body lice is treated by inunction from the neck down with 1 oz. (30 gm.) of the ointment, containing 1% hexachlorohexahydrobenzene, 0.2% 9-aminoacridine hydrochloride, and 1% acyclolaminoformylmethylpyridinium hydrochloride. For head affections, the scalp is anointed with 5 gm. of the unguent and covered for several hours with wax paper. Liberal applications rid affected areas of the pubic louse.
Arch. Dermat. & Syph. 66:103-106, 1952.

Because of complex interplay of etiologies, careful investigation and management are needed in hand eczemas.

Eczema of the Hands

FRANK E. CORMIA, M.D.
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PERHAPS the most confusing syndrome encountered in dermatology is eczema affecting mainly the hands. Many etiologic factors may be involved in one case. Moreover, nummular eczema and chemical irritation are the only two forms with a distinctive appearance.

Of 150 cases of eczema of the hands, the types, listed by Frank E. Cormia, M.D., according to frequency of occurrence, were:

Contact dermatitis
  Hypersensitivity
  Chemical irritation
    Housewife's eczema subgroup
Dermatophytid
  Associated with severe focus of dermatophytosis
  Precipitated by psychosomatic factors
  Precipitated by penicillin
Food allergy
Localized atopic eczema
Vesicular neurodermatitis
Nummular eczema
Autoeczematization
Ichthyosis
Dermatitis medicamentosa
Miscellaneous (trauma, infection, endocrine, etc.)

Secondary factors contributing to the development, relapse, or persistence of the eczematous eruption, also in order of frequency, were:

Irritation from soap
Psychosomatic
  Precipitating
  Influencing
Infection
  Occult
  Gross
  Focus
Atopic background
  Family
  Hay fever, asthma, hives
  Previous eczema
Treatment aggravation
  Chemical irritation
  Sensitivity
Secondary autoeczematization
Heat
Hyperhidrosis
Food allergy
Secondary contact dermatitis
Vasomotor
Ichthyosis, menses
Endocrine

Main factors responsible for chronicity were chemical irritations, psychosomatic ills, contact sensitivity, dermatophytids, food allergy, atopic irritability, infection, autoeczematization, and endocrine disturbance.

Generally, all cases of eczema of the hands should be carefully investigated and the causative factors identified and eliminated. The problem should be thoroughly discussed with the patient, for if the therapist's problems are understood, lapses are less frequent and cooperation is better.

Contact dermatitis—The dry and crusted eczematoid lesions in contact cases may occur singly or be

Eczema of the hands. Canad. M. A. J. 66:451-457, 1952.

complicated by vesiculobullous lesions and variable amounts of swelling with or without secondary infection. The location is often confined sharply to the actual area of contact. The palms may be spared.

Aggravation by treatment and by soap is common. Cotton or rubber gloves should be worn, and initial local therapy should be mild, with bland compresses, supplemented frequently by systemic antibiotics when exudation with secondary infection occurs. In the acute phase of the eruption, roentgen therapy is contraindicated, as development of secondary autoeczematization may result.

Dermatophytid—Typically, with dermatophytid, vesicular lesions develop over the fingers and on the palms and an active focus is found on the feet. But not all such eruptions are dermatophytids; recurrence after removal of the active focus indicates the need for further study. Such reactivation may result from superimposed food allergy, penicillin dosage, or psychic stress.

Atopic eczema—Uncomplicated localized atopic eczema is identified by dry, frequently lichenified plaques. But secondary contact factors may produce more eczematoid lesions with vesiculation and crusting. If vesiculation is predominant on the plaque-like base, food allergy or psychosomatic factors should be suspected. Unilateral spread and severe exudation may indicate an infectious component.

Food allergy—Diagnosis of food allergy is most frequently substantiated by elimination diets. Primary requisites are that the eruption subside permanently after removal of the offending allergen and recur promptly after reingestion of the suspected food.

Hand eczema produced by foods may resemble eruptions of dermatophytosis or vesicular neurodermatitis or bizarre types of contact dermatitis. Food allergy is often associated with psychic stress and atopic factors. Allergenic tendency may be familial.

Vesicular neurodermatitis—Psychosomatic factors are important in the development and course of hand eczemas. Vesicular lesions on a noninflammatory base appear anywhere over the hands but most commonly on the fingers and palms. Psychosomatic eczema will appear when the causative circumstances become intolerable and nervous stress is increased. When plaques or lichenified elements are identified, other agencies are invariably active.

Infectious dermatoses—Primary infectious dermatitis from combined staphylococcic and streptococcic infection may be cured by prolonged aureomycin therapy. Secondary infection contributes to chronicity in nummular eczema, however. The condition is characterized by sharply marginated and intensely itchy eczematoid plaques on the hands or diffusely over the extremities. Regimens against infection are not uniformly successful, indicating that other etiologic factors, such as ichthyosis or vitamin A deficiency, are operative.

Strict adherence to prophylactic measures will drastically reduce formation of phosphatic kidney stones.

Control of Renal Phosphatic Calculi

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ADMINISTRATION of aluminum gels together with a constant dietary intake of phosphorus may avert the formation of phosphatic stones in the urinary tract and help to prevent increase in size of stones already present.

After pyelolithotomy or nephrolithotomy for phosphatic calculi, 25 to 35% of patients can be expected to have recurrences, especially when tissue damage, obstruction, and infection are present in the urinary tract to enhance the rate of stone growth. Yet no new stones developed in any of 37 patients treated prophylactically for fourteen months or longer. All had previously had phosphatic calculi formed naturally and most of the patients treated had had more than 1 calculus.

Victor F. Marshall, M.D., and James L. Green, M.D., administer 40 cc. of Amphojel or 30 cc. of Basaljel after meals and at bedtime. The amounts are varied slightly, based on quantitative analyses of the twenty-four hour urinary output of phosphorus, calcium, and creatinine. The urinary phosphorus excretion should be kept below 300 mg. a day. A diet must be observed supplying approximately 1,300 mg. of phosphorus and 700 mg. of calcium per day, with a fluid intake of about 3,000 cc. Antimicrobial drugs and urologic measures are employed according to usual indications.

The prophylactic regimen must be adhered to strictly. Defection for any length of time almost universally results in the formation of fresh calculi or increase in size of preexisting stones.

Prolonged use of the gel and diet therapy produces no recognizable pathologic lesions and no significant undesirable metabolic effects. Impaired renal function and existing infection do not hamper the effectiveness; in fact, uremia with retention of phosphate may be favorably influenced.

The urine many remain alkaline and infected with urea-splitting organisms, yet the decrease in phosphate checks stone formation. No increase in calcium output or other undesirable chemical changes in the urine occur. The treatment is appropriate even when the patient is debilitated, since the strain on the weakened kidneys is decreased by the regimen.

Aluminum gels with constant phosphorus intake for the control of renal phosphatic calculi. J. Urol. 67:611-622, 1952.

The favorable results obtained enable the surgeon to remove phosphatic calculi in cases in which operation was formerly inadvisable because prompt recurrence was almost a certainty.

Encrustations of phosphate on catheters, drains, ulcers, and tumors exposed to urine are prevented and, in many instances, preexisting soft incrustations disappear.

The gel treatment also seems to give some symptomatic relief in cases of acute and chronic renal inflammation.

The two principal disadvantages of the gel therapy are the tendency to constipation and the difficulty in maintaining reasonable control of the regimen.

An adequate fluid intake, occasional employment of cathartics, and daily use of laxative fruits and vegetables permitted in the diet ordinarily regulate bowel function satisfactorily. A gel preparation containing magnesium trisilicate is particularly useful against constipation.

Consistent cooperation of the patient is necessary to maintain the prophylaxis, and the twenty-four-hour urinary output of inorganic phosphorus must be determined. Frequent explanation of the objectives of the program aids in maintenance of therapy. The addition of flavoring alters the monotonous blandness of the gel. Tablets of Amphojel may be preferred to the liquid form.

¶ GOUT AND URINARY CALCULI may have a causal relationship. W. E. Kittredge, M.D., and Ralph Downs, M.D., of Tulane University of Louisiana, New Orleans, report an incidence of stones of from 14 to 17% in gouty patients compared to an average incidence of 1.23% among general admissions to the urologic clinics. The renal damage is chiefly tubular, conducing to increased uric acid excretion. Elevated serum levels are found only with advanced nephrosclerosis, in which all nitrogenous products are retained. Control of the gout will frequently retard or prevent calculous formation. Restriction of purines, alkalinization of urine with up to 40 gr. of sodium bicarbonate four times a day, and reduction of the trioxypurine level with acetylsalicylic acid in amounts up to 6 gm. daily are useful procedures. Aspirin is not always successful in preventing attacks, but less than 4 gm. daily may cause retention of uric acid in the blood stream instead of elimination. Colchicine, 0.5 mg. three times a day, is the best drug to use in therapy of acute attacks of gouty arthritis. Cortisone or ACTH, 150 to 200 mg. daily in four divided doses, may be used in resistant cases. The latter substance, however, can precipitate an acute arthritic episode and should not be used in the routine treatment of gouty arthritis.

J. Urol. 67:841-849, 1952.

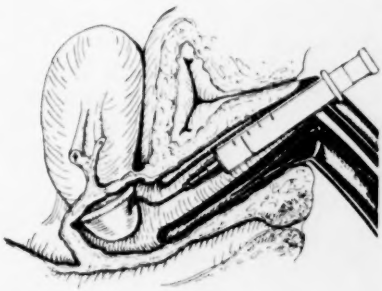
Infertility for no obvious cause may be overcome by use of a cervical cap if other measures prove futile.

Cervical Cap for Deficient Semen

MARVIN H. GRODY, M.D., DONALD W. ROBINSON, M.D., AND WILLIAM H. MASTERS, M.D.
Washington University, St. Louis

THE fertilizing capacity of oligospermic semen may be increased by application of the ejaculate to the cervix in a plastic cap.

The method enabled 10 of 15 couples with deficient sperm to have children after unsuccessful treatment by other technics. In a total of 27 infertile pairs, including 12 cases of apparently normal semen, pregnancies resulted in 15 instances, or 56%.



Marvin H. Grody, M.D., Donald W. Robinson, M.D., and William H. Masters, M.D., define oligospermia as a count under 60,000,000 per cubic centimeter. Decreased motility, short life span, and deformity are also taken into account, and deficiency is assumed only after many analyses by the rules of Falk and Kaufman.

Before the tedious operation of using the cervical cap is attempted, the partners must have tried to conceive for at least a year and a half. Then an intensive regimen of diagnosis and treatment is observed for two to four months.

Often inhibiting factors other than oligospermia are revealed, chiefly poor metabolic function in 1 or both partners or, in the woman, endocrine disorders shown by the basal metabolic rate, vaginal smear, and endometrial biopsy. Malfunction is corrected, and a further trial period of two to four months is observed.

The technic may be useful in some cases with seemingly normal sperm and no obvious cause for infertility if other types of therapy have been tried for a year and a half to two years without result.

Ovulation time is determined by vaginal smears. During the presumptive phase, specimens are obtained every twelve hours for prediction of the next cycle. Estimates are accurate in at least 90% of cases. In addition, all women keep charts of rectal basal temperature.

Size of the cap is determined in routine preliminary examination. The device is employed twice dur-

The cervical cap. An adjunct in the treatment of male infertility. J.A.M.A. 149:427-431, 1952.

ing the ovulatory phase of each cycle after three to five days of sexual abstinence. If possible, the first capping is done twelve to twenty-four hours before ovulation and the second thirty-six hours later.

From fifteen to twenty minutes before application, semen is collected by masturbation in a clean, wide-mouthed glass tube. At least ten minutes is allowed for liquefaction before transfer to the cap.

A special neutralizing solution favorable for sperm survival is used for a douche and as a rinse for the cap and the rubber glove, which should not be powdered.

The entire ejaculate is poured into the cap. With the woman in lithotomy position, labia are spread by the gloved hand, and the cap is placed in the introitus.

Covered by the index and middle fingers, the cap is then slipped along the posterior vaginal wall in horizontal position, to prevent spillage. With a little pressure toward the vaginal wall, the cervix falls into the cap as fingers are removed. A slight push on the bottom of the cap insures close fit.

If the uterus is retrodisplaced or the introitus and vagina are small, making insertion difficult, an empty cap with a hole drilled just beneath the rim is fitted over the cervix, and the cap is rotated so that the hole is in an anterior position. The semen is drawn into a Luer-Lok syringe through a 20-gauge needle with the distal third bent into a semicircle to fit around the cervix. Air in the cap is removed, semen is injected, and the cap is lightly pressed up.

Caps are left in place for eight to sixteen hours. Impregnation usually occurs in 3 capping cycles or less, rarely after 5 to 11 cycles, and treatment is often effective even with sperm counts below 15,000,000 per cubic centimeter.

The longer the period of sterility, however, the less likely is conception. Success may be expected after one and a half to three years of barren marriage, but in only half the cases after three years or more.

¶ UMBILICAL HERNIA of infantile type is probably about 8 times as frequent among Negro children as white. The rupture has a familial trend and is common with cretinism and prematurity, which involve low basal metabolism and poor muscle tone. Defects are benign and usually disappear in a few years. E. Perry Crump, M.D., of Meharry Medical College, Nashville, Tenn., observed such hernias in 329 of 1,237 Negro children, or 26.6%. Only 2.6% more girls were involved than boys. About 42% of babies under 1 year were affected, but none of a group of children more than 7 years old. The frequent depiction of umbilical hernias in African sculpture, often with decorative scarring around the defect, would indicate that these lesions are considered ornamental among the African Negroes.

J. Pediat. 40:214-223, 1952.

Periodic headache in pediatric practice usually can be treated satisfactorily by a flexible drug regime.

Migraine in Children

MORRIS I. MICHAEL, M.D., AND JONATHAN M. WILLIAMS, M.D.
Children's Hospital, Washington, D. C.

RECOGNITION and prompt treatment of migraine headache in childhood offers a much more hopeful prognosis than later therapy of the same syndrome stubbornly entrenched over a period of many years.

Morris I. Michael, M.D., and Jonathan M. Williams, M.D., find that the migraine headaches of children seldom reach the stage of obstinate chronicity so often seen in older people and, unless the child has convulsions, usually yield to certain antihistamines or to ergotamine tartrate with or without caffeine. Dilantin in daily maintenance doses may be effective. When frank convulsions are noted, phenobarbital or other analeptics may be tried.

The striking feature of the disorder in children is the frequency of attacks, two or three a week being common. No definite etiology can be assigned to the condition, although the usual factors of allergy, heredity, and previous concussion show a coincidental preponderance in some cases.

The possible influence of heredity or allergy in the development of migraine was noted in 15 of 20 children between 6 to 14 years of age. In 8 cases, at least 1 of the parents had severe periodic throbbing headaches; in another 3, close relatives had migraine. In 4 families, relatives had allergic disorders; in another, an aunt had epilepsy. Only 2 children in the group had allergic manifestations coexistent with the migraine, however. The association of migraine and epilepsy was seen in the remaining 5 cases.

In all cases, symptomatology closely agrees with the accepted migraine complex of periodicity, cephalalgia, and gastrointestinal disturbances. The latter symptom varies from child to child and from one attack to another. Phenobarbital in 1 case reduced the frequency of headaches but had no effect on the gastrointestinal manifestations.

For the children with convulsions, phenobarbital or other analeptics reduced the migrainous attacks as well as the convulsions. For 13 of the 15 children not having convulsions, antihistamine, such as Benadryl, Thephorin, or Pyribenzamine, given at the onset of an attack aborted the headaches. Whether the drugs are effective because of antihistaminic properties or sedative effects has not been definitely determined.

Gynergen was given orally or parenterally to 2 children and 3

Migraine in children. J. Pediat. 41:18-24, 1952.

received oral Cafergot. These drugs were employed at the beginning of an attack and in all instances aborted the headache. In several cases, however, the headache tended to return about two hours later. The recurrence was adequately controlled by 0.3 gm. of aspirin.

Electroencephalographic studies in 14 of the 20 cases indicated a normal tracing in only 1 patient. As a result of the relationship of electroencephalographic changes and convulsions to migraine, 4 patients were given maintenance doses of Dilantin, 0.1 gm. up to four times daily, as prophylactic therapy; 3 of the patients became completely, or nearly completely, free from attacks.

Apical Diastolic Murmurs in Children

ALEXANDER S. NADAS, M.D., AND MARIANO M. ALIMURUNG, M.D.

THE mitral diastolic murmur, a rumbling, usually low-pitched sound heard best at the apex, is commonly accepted as proof of mitral stenosis.

Other conditions may be responsible, however, including several congenital heart diseases. Although ventricular septal defect is known to be a cause, an apical diastolic murmur with atrial septal defect is still interpreted as due to mitral stenosis, and a diagnosis of Lutembacher's syndrome is made.

Actually, patients with atrial defects seldom have narrowed mitral valves, and the possibility does not warrant delay in surgical repair.

Alexander S. Nadas, M.D., of Harvard University, Boston, and Mariano M. Alimurung, M.D., of the University of Santo Tomas, Manila, found 19 instances of apical diastolic murmur in 100 consecutive cases of noncyanotic congenital heart disease.

Types of lesion were determined in a second group of 20 boys and girls with congenital disorders and apical diastolic murmurs. Ages were 4 to 19 years. Atrial septal defect, ventricular septal defect, and patent ductus arteriosus were often found, but no example of Lutembacher's syndrome.

The phonocardiogram differed in several respects from tracings of truly stenotic mitral valves. [1] No opening snap of the mitral valve was evident. [2] The diastolic murmur was usually confined to middiastole and was seldom crescendo. [3] Accentuation of the first apical sound was neither prominent nor consistently observed.

In review of nearly 25,000 consecutive autopsies, 87 instances of atrial septal defect were tabulated but only 5 of Lutembacher's syndrome.

Apical diastolic murmurs in congenital heart disease. Am. Heart J. 43:691-706, 1952.

Familiarity with current trends and advances in immunization is a practical necessity for practitioners today.

Immunization Procedures

AIMS C. MC GUINNESS, M.D.
University of Pennsylvania, Philadelphia

AT the earliest possible age all children should be immunized against diphtheria, pertussis, tetanus, and smallpox.

Newborn infants of susceptible mothers and 30 to 50% of the adult population are susceptible to *diphtheria.* Susceptible infants respond well to primary immunization against diphtheria as early as the second month of life, while maternally endowed immune infants are adequately protected by a single stimulating dose of toxoid given between the ninth and eighteenth months.

To eliminate severe reactions to diphtheria toxoid, older children and adults should receive Schick tests and Schick test controls before active immunization. If the control reaction is positive, toxoid should be withheld. If the Schick reaction is positive and the control negative, the following schedule is employed: 0.1 cc. toxoid; if no reaction, three to five days later 0.3 to 0.5 cc. toxoid should be given; if no reaction, three to four weeks later 0.5 cc. toxoid is given.

A booster dose of diphtheria toxoid should be given every three to four years and requires exceedingly small amounts of antigen; 0.1 cc. toxoid is used every four years until the child is 12 to 14 years of age. Older persons may have severe reactions from even this minute dosage.

Any patient exposed to diphtheria should be given a large dose of penicillin, removed from the source of infection, and observed closely. Antitoxin should be administered only on evidence of beginning infection.

Multiple antigens produce no greater reactions in infants and young children than do single antigens. For children over 4 years, however, single antigens should be used, since febrile reactions occur more frequently after that age when multiple antigens are employed.

Toxoid is much purer today than a few years ago and contains less alum than did the older preparations. Because of the superior antigenic response, alum precipitated or aluminum hydroxide adsorbed toxoids are preferred to the fluid antigens.

Antigens should not be given to a child with respiratory or other infection or during very active teething. During local poliomyelitis epidemics, children 6 months or more of age should not receive elective immunization injections be-

Review of current trends in active and passive immunization. J.A.M.A. 148:261-265, 1952.

cause of the apparent correlation between recent antigen injection and paralysis during poliomyelitis infection.

Injections should be made deep subcutaneously or intramuscularly and followed with a small bubble of air to clear the needle tract.

Aims C. McGuinness, M.D., starts when the child is 2 to 3 months of age with three doses of 0.5 cc. each of alum precipitated or aluminum hydroxide adsorbed diphtheria-tetanus toxoid combined with pertussis vaccine to be given at monthly intervals. At 10 to 18 months, 0.5 cc. should be given and repeated at 3 years of age.

If more than a slight reaction appears after the initial injection of triple antigens, single antigens should be used thereafter. Since pertussis vaccine may cause encephalopathy, this vaccine should not be given again to a child who had convulsions after the initial dose of triple antigen.

If triple antigen evokes only a moderately severe reaction, saline pertussis vaccine should be injected, beginning with a small dose, 0.1 cc., of a standard vaccine containing 15 to 20 billion organisms per cubic centimeter, followed by weekly injections of increasingly larger doses, based on tolerance, until a total of 80 to 90 billion organisms has been given.

Similarly, a trial dose of 0.1 cc. of diphtheria toxoid should be injected and, if no serious reaction ensues, 0.5 cc. is administered several days later and repeated in one month.

During *pertussis* epidemics, rapid immunization may be achieved by weekly doses of 1 cc., 1.5 cc., and 1.5 cc. of saline vaccine containing about 15 to 20 billion organisms per cubic centimeter. Subsequently, booster doses of vaccine in isotonic sodium chloride or alum solution should be given.

Protection against pertussis lasts three to four years after primary immunization. After known close exposures, 1 cc. saline vaccine, 15 to 20 billion organisms, is employed for previously immunized children.

Nonimmunized infants exposed to pertussis should be given 1 or 2 injections, 20 cc. each, of human immune serum or 1 or 2 injections, 2.5 cc. each, of gamma globulin fraction of the serum.

Booster doses of 0.5 cc. of *tetanus* toxoid should be given immediately after a wound and routinely at three-year intervals. If four years or more have elapsed since a booster injection or if the patient has severe and extensive wounds, 1,500 to 3,000 units of antitoxin should be given in addition to the toxoid booster, employing different syringes. Fluid tetanus toxoid elicits more rapid recall than does the alum precipitated toxoid.

Tetanus antitoxin, 1,500 to 3,000 units, should be given after penetrating and dirty wounds to nonimmunized persons.

Smallpox vaccination is performed during the first year of life and at four-year intervals thereafter. The vaccine should be properly refrigerated and each batch tested for some typical vaccine takes. Vaccination should not be

done when the child has eczema or skin infection. The site of inoculation should be covered lightly if at all.

Immune serum globulin (gamma globulin) is effective in modifying the course of *measles* after known exposure.

German measles presents a hazard to the fetus of a woman in the first trimester of pregnancy. Therefore, 2 injections of gamma globulin of 10 cc. each or larger are given at five to seven-day intervals to a woman exposed to rubella in the first trimester of pregnancy who has not previously had the disease.

Egg fluid vaccines are of value in the active immunization of adults against *mumps* during local epidemics and usually produce at least a temporary, six- to twelve-month immunity. Such patients should have skin tests or complement-fixation tests, or both, to determine existing immunity. Active immunization is usually not used for infants and children.

Human gamma globulin is effective in passive immunization against *infectious hepatitis.* A single injection in a dosage of 0.01 to 0.06 cc. per pound of body weight protects children continuously and intimately exposed to epidemic hepatitis for five to nine months.

Active immunization against *scarlet fever* is reserved for personnel with negative Dick reactions working in communicable disease hospitals, and is not routinely used in pediatrics. The sulfonamides and antibiotics are effective prophylactically and therapeutically.

Children should be immunized against *typhoid* only if residing in or likely to be traveling in endemic areas. One-fourth to one-half the adult dose of vaccine is employed. Straight typhoid vaccine is preferred to the triple antigen containing paratyphoids A and B. Booster doses of 0.1 cc. intradermally or 0.5 to 0.1 cc. subcutaneously should be given at one- to three-year intervals.

Active immunization against *Rocky Mountain spotted fever* is given only to persons living in or planning travel in endemic areas.

Active immunization against *influenza* is not done routinely for children except when an attack might be hazardous, as for a child with recurrent rheumatic fever.

Rabies may be prevented by the gamma globulin fraction of hyperimmune sheep serum in doses of 0.25 cc. per pound of body weight.

¶ TRANSFER OF DRUGS INTO MILK usually is too slight to harm a nursling since only traces of most drugs taken by the mother occur in breast milk. The newborn is especially sensitive to barbiturates, however, even in small amounts. Transfer of bromides and iodides may also occur in large enough amounts to be harmful. Thiouracil is the only substance known to appear in higher concentration than in blood or urine, asserts Hans Mautner, M.D., of the Wrentham State School, Mass.

J. Mt. Sinai Hosp. 19:80-83, 1952.

Veritable herpes virus septicemia may develop in the newborn without significant cutaneous lesions.

Fatal Visceral Herpes Simplex

WOLF W. ZUELZER, M.D.
Wayne University, Detroit

CYRIL S. STULBERG, PH.D.
Child Research Center of Michigan, Detroit

INFECTION by the virus of herpes simplex, usually assumed to be limited to the skin and mucous membranes, may be associated with severe and even fatal systemic disease in infants.

After postmortem studies of 5 newborn and 3 older babies, Wolf W. Zuelzer, M.D., and Cyril S. Stulberg, Ph.D., conclude that the virus can produce sepsis-like fatal visceral disorders or hematogenous hepatitis without major cutaneous eruption.

Symptoms and signs among the infants are remarkably similar from case to case. General reaction occurs about the fifth to seventh day of life with onset of fever or hypothermia, increasing icterus, lethargy, respiratory distress, vomiting, dyspnea, cyanosis, enlarged liver and sometimes spleen, and a rapidly developing circulatory collapse. Newborn babies more frequently develop this condition when premature than when full term.

Older infants up to twenty-two months of age may have herpetic hepatitis associated with a herpetic gingivostomatitis and viremia. Among these older infants, the symptoms include lesions of the gums, fever, prostration, severe vomiting, enlarged liver, lethargy, convulsions, leukocytosis, and, occasionally, albuminuria.

The course of the disease among newborn and older infants is one of very rapid progression and death within days or even hours after admission to the hospital, despite therapy with plasma, whole blood, penicillin, aureomycin, sulfonamides, synthetic vitamin K, and streptomycin.

At autopsy, the liver, lungs, adrenals, and spleen are found to be riddled with pale yellow, firm, necrotic nodules which are from 1 to 6 mm. in diameter and surrounded by a reddish area. The liver and lungs are hemorrhagic. Microscopic examination shows massive necrosis of liver, spleen, adrenals, and lungs. This necrosis is also present to a lesser degree in kidneys, brain, bone marrow, and small blood vessels.

Herpes virus is the etiologic agent of the systemic disorder, as demonstrated by inoculation of scarified rabbit corneas with material extracted from affected organs.

Because older infants are less

Herpes simplex virus as the cause of fulminating visceral disease and hepatitis in infancy. Am. J. Dis. Child. 83:421-439, 1952.

vulnerable to the virus than are newborn, undiagnosed nonfatal herpetic hepatitis is probably more common than has been hitherto presumed.

No entirely adequate therapy has been found. Maternal antibody does not protect newborn infants as heretofore assumed, and gamma globulin cannot be relied upon even when administered immediately after birth.

Protection of premature infants against herpes involves primarily prevention of exposure. If the mother has herpes of the genitalia at time of delivery, the risk is especially great.

Hospital Care of Premature Infants

ANGUS MC BRYDE, M.D.

THE chief requirement in care of premature babies is methodical nursing supervision.

One nurse is on duty each eight-hour period for every 6 babies at the Duke Hospital, Durham, N. C., and the infants' records are reviewed daily by the attending physician and house staff.

If resuscitation is necessary, Angus McBryde, M.D., employs intermittent oxygen pressure. An intratracheal catheter is connected with a bag and nonrebreathing valve, and a water manometer, usually set at 10 cm. of pressure, acts as a safety valve.

Premature nursery units have only 4 beds apiece. Infants admitted from outside the hospital are isolated for one week, and a special unit is reserved for babies obviously ill.

Antibacterial therapy is always employed in case of [1] artificial resuscitation, [2] maternal infection or early rupture of membranes, [3] birth outside the hospital, or [4] suspicious symptoms such as listlessness, vomiting, diarrhea, or fever.

The daily record includes axillary temperature at each feeding; method and type of feeding; amounts given, refused, or regurgitated; medicines; number and appearance of stools; and urination.

Small infants receive 50% oxygen for one to two weeks in the Armstrong incubator with the upper vents closed. Babies weighing less than 1,500 gm. are fed by gavage and gradually shifted to the nipple.

Subcutaneous fluids are seldom required. A water-soluble vitamin mixture is started in the second week, and at 6 weeks, 2 to 4 gr. of ferrous iron is given daily in liquid form. ACTH may be of some value in arresting retrolental fibroplasia but should be given only with great caution and for a specific purpose.

The hospital management of premature infants. North Carolina M. J. 13:123-124, 1952.

'Carbo-Resin' Therapy

New recipe book helps keep patients on 'Carbo-Resin'

A new *unflavored* 'Carbo-Resin,' which can be incorporated in cookies, puddings, fruit juices, and the like, is now available. Printed recipes giving complete directions for preparing a variety of tasty dosage forms in the home can be obtained from the Lilly medical service representative or direct from Indianapolis upon request.

CAUTION: Only unflavored 'Carbo-Resin' is suitable for incorporation in recipes.

Despite recent antibiotic advances, surgery is still often needed to relieve hypoxia of nondiphtheritic infectious croup.

Infectious Nondiphtheritic Croup

JOSEPH G. GILBERT, M.D., JOSEPH KASNETZ, M.D., IRA M. ROSENTHAL, M.D., AND LAWRENCE MAZZARELLA, M.D.
Kingston Avenue Hospital, Brooklyn, and University of New York, New York City

CLASSIFICATION of croup by the pathologic changes involved rather than by the infectious etiologic agents is a guide to both prognosis and treatment.

Infectious nondiphtheritic croup is defined as a state of respiratory obstruction caused by inflammation of the larynx, with or without involvement of the lower tract. Gilbert's division is most practical:

1] Acute catarrhal laryngotracheitis
2] Supraglottic edematous obstructive laryngitis
3] Subglottic exudative or inspissated obstructive laryngitis and tracheitis
Subglottic edematous obstructive laryngitis and tracheitis
4] Acute obstructive laryngotracheobronchitis

Treatment has improved greatly, as shown by drop in mortality from 23% in 1928 to 0.5% in 1950 in cases at the Brooklyn Kingston Avenue Hospital. In the final twelve years, 2,602 cases were observed. Joseph G. Gilbert, M.D., Joseph Kasnetz, M.D., Ira M. Rosenthal, M.D., and Lawrence Mazzarella, M.D., attribute success to several factors: early laryngoscopic examination, antibiotics, steam and oxygen, tracheotomy when needed, with an airway in place during operation, aspiration of secretions, and close watch for complicating pneumothorax and pneumomediastinum.

Infectious nondiphtheritic croup. Arch. Otolaryng. 55:566-581, 1952.

CLASSIFICATION

• *Acute catarrhal laryngitis and tracheitis* is the commonest and most benign type of infectious croup. As in all forms, a brassy cough, hoarseness, and suprasternal, intercostal, and epigastric retractions are observed. Laryngoscopic examination is not necessary but may be done for diagnosis.

The larynx is red, with mucoid secretion on the vocal cords, but movement of cords is perfectly free. Air should be humidified with steam. Penicillin and aureomycin shorten the course and may prevent serious developments.

• *Supraglottic edematous obstructive laryngitis* usually occurs after the age of 3 years. Stridor is heard, and the voice has a peculiar wavering, guttural, hot-potato quality. Children characteristically sit up with chins forward and mouths open for air. The epiglottis can be seen if the tongue is pulled forward and down.

The first advance in medical management of hemorrhoids in 25 years

For the hemorrhoid patient who must have RELIEF

Many patients suffering from hemorrhoids are not relieved by the classic emollients and lubricants. They require broader, more active therapy. TRICAINAL suppositories are designed for the hemorrhoid patient who *must* have relief. TRICAINAL contains two of the most effective drugs known to medicine:

(1) Pyribenzamine® hydrochloride, 10 mg., the reliably superior antihistamine, for relief of *congestion*, *pruritus*, and *inflammation*.

(2) Nupercaine® base, 2.5 mg. — the exceptionally efficient topical anesthetic for relief of *pain* and *discomfort*.

The soothing cocoa butter base also contains zinc oxide, bismuth subgallate, and acetone sodium bisulfite. Foil-wrapped TRICAINAL suppositories, boxes of 12. TRICAINAL rectal ointment, 1-oz. tubes.

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Nupercaine® (brand of dibucaine)

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Epiglottis, aryepiglottic folds, and arytenoids are often edematous, and 1 or both cords may be fixed. Rarely, the epiglottis is not swollen, but arytenoids are edematous, with fixation of true cords, and diagnosis is made by laryngoscopic examination.

Since extreme hypoxia may develop very rapidly, early diagnosis is imperative, and tracheotomy is generally done at once. O'Dwyer intubation should never be attempted because the tube may be blocked by swollen tissue. The child should be kept in a sitting position at all times, even during transportation to the hospital.

Organisms of *hemophilus influenzae* are frequent, therefore such drugs as aureomycin, chloramphenicol, and terramycin are employed.

• *Subglottic obstructive laryngitis and tracheitis* occurs most often before the age of 2 years. The exudative or inspissated type produces intense retraction and at times cyanosis. Laryngoscopic examinations show the vocal cords almost immobile in the midline, separated slightly by moist exudate or green-gray to black crusts. Cords are freed by aspiration of exudate.

In the edematous group, cyanosis, pallor, and tachycardia indicate more severe hypoxia. Cords are almost or entirely fixed near the midline on either or both sides. Tracheotomy is advisable.

Although extreme restlessness often results from oxygen want, sedatives may hide symptoms or interfere with breathing and must be avoided. If hypoxia continues or returns after tracheotomy, pneumomediastinum, pneumothorax, or both should be suspected.

Air is aspirated from the chest by syringe or a pneumothorax machine, reversing the bottles. For a persistent bronchopleural fistula, underwater drainage may be necessary.

Severe pneumomediastinum requires a vertical incision in the suprasternal notch. Pretracheal fascia is reached by blunt dissection, and closed curved scissors are pointed down toward the upper mediastinum, then opened. After trapped air escapes, the wound closes spontaneously.

• *Acute obstructive laryngotracheobronchitis* is fatal in 70% of cases but accounts for less than 8% of the cases of infectious croup. Affected children are under 2 years, usually less than 1 year old.

Pallor, cyanosis, pronounced retractions, high and mounting temperature, rapid pulse, and increased respirations are noted.

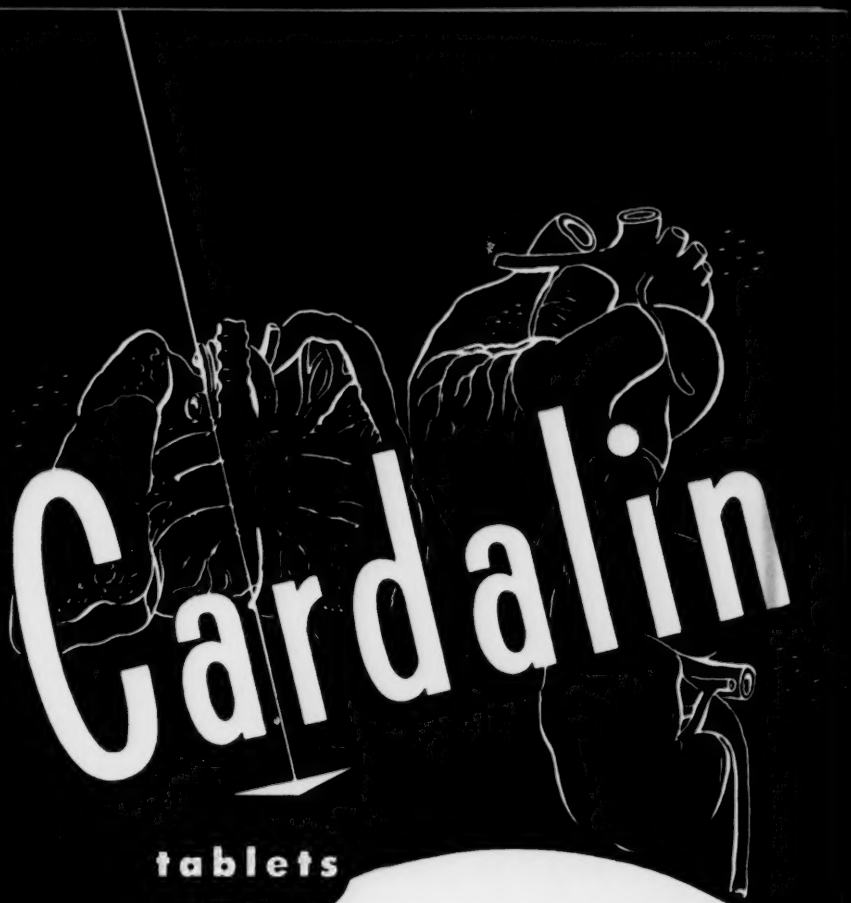
Subglottic edematous laryngitis and fixed cords are combined with edematous tracheobronchitis, and a mucopurulent or gummy exudate extends into the smallest bronchial radicles.

Tracheotomy is undertaken, although less effective than in other forms of croup. Aspiration is generally done with a bronchoscope through the tracheotomy wound.

ANTIBIOTIC THERAPY

Nondiphtheritic infectious croup has such a rapid course that drugs cannot be selected by the usual bacteriologic methods, thus non-

(Continued on page 154)



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Cardalin provides full therapeutic utilization of aminophylline by the oral route of administration, as demonstrated by recent, extensive clinical investigations.

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are reporting about NEO-PENIL*...

the new derivative of penicillin

. . . about its ability to concentrate in the lung:

". . . concentrations of this drug in the lungs after intramuscular injection are five to ten times higher than that of benzylpenicillin [penicillin G]."[1]

. . . about its ability to concentrate in sputum:

"Neo-Penil gave rise to significantly higher concentrations of penicillin in bronchial secretions than did procaine penicillin . . ."[2]

"Procaine penicillin, in the same dosage, produces considerably lower sputum levels or fails to appear at all."[3]

. . . about its effectiveness in bronchopulmonary disease†:

"Our own evidence would indicate that it is a more effective form of penicillin in patients with chronic pulmonary emphysema and bronchopulmonary infection."[4]

"This compound appeared to have a unique value in respiratory infections due to gram-positive bacteria."[1]

"Prompt reduction or elimination of pus from the sputum occurred in 75 per cent of fifty patients with chronic bronchitis and bronchiectasis, with a comparable clinical improvement."[1]

†For additional evidence, turn to page 42.

. . . about its ability to concentrate in other tissues:

". . . it is apparent that this compound possesses chemical or physical properties that bring about a higher concentration of penicillin than that brought about by procaine penicillin in: the erythrocytes and leucocytes of cats, in the lungs of dogs, and in bronchial secretions, spinal fluid, and umbilical cord blood of humans."[2]

. . . about its toxicity:

". . . the toxicity of the compound appears to be of the same order as that of procaine penicillin."[2]

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'Neo-Penil' is available at retail pharmacies, in single-dose, silicone-treated vials of 500,000 units.

Smith, Kline & French
Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for penethamate hydriodide, S.K.F. (penicillin G diethylaminoethyl ester hydriodide) Patent Applied For

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toxic agents with a broad antibacterial spectrum are employed.

Aqueous crystalline penicillin G sodium is given intramuscularly, at least 100,000 units every three hours. Not less than 25 mg. of aureomycin per kilogram of body weight is also administered each day in 6 oral doses.

If swallowing is difficult, chloramphenicol may be given rectally or intramuscularly. Streptomycin is recommended by some but may cause vestibular damage.

Pons and Hypothalamus in Poliomyelitis

HOWARD A. MATZKE, PH.D., A. B. BAKER, M.D.,
SAM CORNWELL, AND IAN A. BROWN, M.D.

MANY deaths from bulbar poliomyelitis can be averted by knowledge and prompt treatment of bizarre complications, such as suffocating gastric distention, resulting from lesions in vital centers.

At the University of Minnesota, Minneapolis, symptoms in fatal and nonfatal cases were correlated with actual changes observed post mortem.

Howard A. Matzke, Ph.D., and A. B. Baker, M.D., examined the pons in 109 cases. Bulbar poliomyelitis involves this region in practically every instance, usually causing both neuronal damage and diffuse infiltration of interstitial cells. Motor nuclei of the fifth, sixth, and seventh cranial nerves are always more or less affected.

The most serious complication is occasional sudden lockjaw, which commonly develops after a week of illness and lasts five to seven days. Immediate tracheotomy may prevent asphyxiation by secretions.

The center for control of circulation extends from the medulla into the pons, where necrotic lesions may be rapidly fatal.

Diffuse hypothalamic injury was observed by A. B. Baker, M.D., Sam Cornwell, and Ian A. Brown, M.D. Inflammatory lesions were seen in 85% of 115 cases and considerable neuronal damage in 61%.

Outstanding symptoms are inordinately high or low temperature, deranged vascular control with acute hypertension, variations in sleep and wakefulness, and fairly frequent gastric hemorrhage or stasis.

Bleeding from the stomach should be considered when shock develops. Severe distention with respiratory embarrassment may occur in early convalescence and requires quick aspiration of fluid and gas to save life.

Emotional instability, particularly under stress, sometimes continues for years after recovery.

Poliomyelitis. V. The pons. VI. The hypothalamus. Arch. Neurol. & Psychiat. 68:1-36, 1952.

Extreme variability of symptoms and signs is one of the chief characteristics of tumors of the medulla oblongata.

Tumors of the Medulla Oblongata

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JAMES W. KERNOHAN, M.D., AND WINCHELL MC K. CRAIG, M.D.
Mayo Clinic, Rochester, Minn.

PRIMARY neoplasms of the medulla oblongata, an extremely rare condition, cause a wide variety of symptoms and signs, most of which have no specific localizing value and cannot be regarded as pathognomonic.

At least 6 distinct clinical syndromes were noted among 15 patients with primary medulla oblongata malignant growths, state Irving S. Cooper, M.D., James W. Kernohan, M.D., and Winchell McK. Craig, M.D. These were [1] signs due to involvement of cranial nerves, pyramidal tracts, and cerebellar tracts, [2] signs referable to cranial nerves and pyramidal tracts without cerebellar signs, [3] cerebellar signs and symptoms alone, [4] signs referable to the pyramidal and somatic sensory tracts alone, [5] an objectively normal nervous system without neurologic signs, and [6] syncopal and convulsive manifestations.

Ataxia is the most common symptom, being one of the first 3 indications in half the cases studied, and occurring in 67% of the patients at some time during the disease.

Weakness of one or more limbs is the next most common symptom, although not present as often as would be expected. The relative infrequency of involvement of the pyramidal tracts is due to the tendency of the neoplasms to lie in the upper portion of the medulla, thereby involving the corticospinal pathways by means of pressure rather than direct invasion.

Occipital or cervico-occipital headaches, diplopia, and vomiting occur with approximately half the medullary neoplasms. One or more signs of increased intracranial pressure accompany many of the headaches. Internal strabismus and diplopia result from encroachment on the abducens nerve, often because of direct pressure. Vomiting is probably due to involvement of the dorsal motor nucleus of the vagus nerve, since signs of increased intracranial pressure may not appear.

Numbness and paresthesia, hiccup, vertigo, and dysarthria may be found. The dysarthria can result from involvement of the hypoglossal nerve or of suprasegmental fibers to the hypoglossal nucleus or can be cerebellar in type.

Mental symptoms due to secondary cerebral changes and intention tremor, blurred vision, coma, or epileptiform convulsions are occasionally seen.

Tumors of the medulla oblongata. Arch. Neurol. & Psychiat. 67:269-282, 1952.

Signs of involvement of the pyramidal tract and of areas outside the tract—muscular weakness, the Babinski reflex, or increased deep reflexes—are the most frequently noted neurologic signs and may be bilateral.

Cranial nerve involvement is usually multiple and is manifest in nearly half of cases. The facial nerve is the most frequently affected, but signs of injury to the glossopharyngeal, vagus, hypoglossal, and spinal accessory nerves are seen.

Ataxia and nystagmus are often observed simultaneously and have led to a diagnosis of cerebellar tumor, particularly in children.

Impairment of pain, touch, and temperature sensation is not uncommon. Astereognosis and glycosuria are infrequent.

Apparently, children in the first ten years of life are affected considerably more frequently by neoplasms of the medulla oblongata than are persons of any other age.

The majority of medullary tumors are gliomas, generally astrocytomas. The remainder are usually hemangioendotheliomas.

An outstanding feature of such growths is the frequency of sudden, unexpected death from acute respiratory failure. A tremendous tumor is found after death, in contrast with the relative paucity of neurologic signs. The persistence of axis cylinders, with relative resistance to pressure phenomena in the midst of an infiltrating glioma, accounts for the preservation of neurologic function. The similar resistance of ganglion cells is undoubtedly responsible for the infrequency of signs of cranial nerve involvement.

HYPERHIDROSIS of the hands and feet usually abates after application of constant current. The effect, which is temporary, apparently results from direct inhibition of the sweat glands. Metal electrodes, preferably aluminum plates, heavily covered with cellucotton, are laid in two enameled or plastic photographic trays and tap water is added to cover the hand resting comfortably on the electrode. During the first few treatments, the fingers and all palmar cracks and fissures may have to be coated with cold cream or petroleum jelly to prevent pain. The current intensity, sometimes of 50 to 75 milliamperes, depends on the tolerance of the patient and is applied for twenty or thirty minutes daily or every other day until the condition disappears. In treating the feet, earthen crocks may be used as the containers. All usual precautions must be observed against sudden interruption of the flow. H. D. Bouman, M.D., and Emma M. Grunewald Lentzer, M.S., of the University of Wisconsin, Madison, report success in 103 of 113 cases. Drying was effected in 6 additional patients with aluminum ion transfer. Remissions after five to thirteen visits last as long as three months and patients usually willingly return for re-treatment.

Am. J. Phys. Med. 31:158-168, 1952.

effective in 6 out of 7 cases of functional vomiting[1] . . . reduces gastrointestinal smooth muscle contractions physiologically . . . contains no antihistaminics, barbiturates, or other drugs . . . also useful in nausea of pregnancy, and for drug- or anesthetic-induced vomiting

1. Bradley, J. E., et al.: J. Pediat. 38:41, 1951; idem: Amer. Acad. Pediat., meeting Oct. 16, 1951.

IMPORTANT: **EMETROL** is stabilized at an optimal physiologic pH level. Dilution would upset this careful balance. For this reason, **EMETROL** is always taken straight, and no fluids of any kind are allowed for at least 15 minutes after administration.

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Daily ophthalmoscopic examination aids obstetric management of a diabetic gravida with a toxemia of pregnancy.

Retina in Diabetic, Toxemic Pregnancy

STUART S. SNYDER, M.D.
New York Hospital–Cornell Medical Center, New York City

WHEN childbearing is complicated by diabetes mellitus and toxemia, babies are frequently stillborn.

Many lives can be saved by premature delivery, and the time to intervene is indicated by changes in retinal arterioles as well as renal function. Stuart S. Snyder, M.D., strongly advises a daily ophthalmoscopic examination in every case.

Diabetes alone in pregnancy increases fetal mortality to between 10 and 20%. Moreover, superimposed preeclampsia or toxemia occurs in 27 to 46% of gestating diabetic women.

From January 1939 through June 1950 at the New York Lying-In Hospital, 131 pregnancies were associated with diabetes. Toxemia with adequate eyeground inspection was recorded in 37 cases, and in the toxemic series 15 or 41% of infants were dead at birth.

Relatively minor preeclampsia occurred in 22, or 59%, of the diabetic, toxemic group and severe preeclampsia in 7. A few women had slight to severe hypertension and 1 had kidney disease.

Retinal appearance was classified as Grade 0 when arterioles were normal, Grade 1 indicated increased arteriolar reflex stripe, Grade 2 copper wire vessels with local or general spasm, Grade 3 the same with retinopathy, and Grade 4 additional papilledema.

No mothers died, and ages of those who delivered live and dead babies were almost identical. Type and intensity of diabetes did not seem as important to the infant's prognosis as the nature and severity of toxemia. Status of the eyegrounds was closely related to the child's fate.

Of 15 slightly preeclamptic patients with diabetes in various stages and Grade 0 or 1 retina, 11 had living babies, but only 2 infants survived of 7 mothers with Grade 2 involvement.

However, 2 living children were born prematurely by cesarean section in spite of Grade 3 lesions. A severely preeclamptic mother was delivered in the thirty-fifth week, and 1 with slight hypertension in the thirty-second week.

All 4 women with severe hypertension had stillborn infants, although retinas of 3 did not exceed Grade 1. In a case of kidney disease with Grade 3 lesions at fourteen weeks and cesarean section at thirty-two weeks, the child was born alive but died in a few hours.

Retinal findings in pregnancy complicated by diabetes mellitus and toxemia. Am. J. Ophth. 35:831-836, 1952.

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1. Batterman, R. C.: Modern Medicine, *19*:59, 1951.
2. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics. The Macmillan Company, New York, 1941.

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In deciding when to interrupt gestation, blood chemistry must be considered with the retinal pattern. Laboratory tests are not significantly affected with Grade 0 or 1, but in more serious cases with Grade 2 changes, uric acid and nonprotein nitrogen are apt to be high and carbon-dioxide combining power low.

Diabetic women with slight preeclampsia may be allowed to deliver spontaneously at or near term unless more pronounced retinal arteriolar lesions develop. In severe cases with Grade 1 fundus, if the baby is large enough, labor should be induced or cesarean section done before Grade 2 appears.

Diabetic gravidas having slight hypertension can safely deliver at term unless toxemia affects arterioles. If a combination of diabetes, toxemia, and Grade 2 vessels is seen in the first trimester, abortion may be wise. The same picture in the third trimester means that gestation must be ended.

Therapeutic abortion is probably necessary if Grade 3 or 4 eyegrounds are discovered in the first three months. Later, such changes call for immediate delivery.

Prevention of Diabetic Retinitis

JAMES W. SHERRILL, M.D.

CAREFUL control of diabetes may prevent retinal damage for many years, although capillary microaneurysms in the perimacular area are among the earliest organic changes.

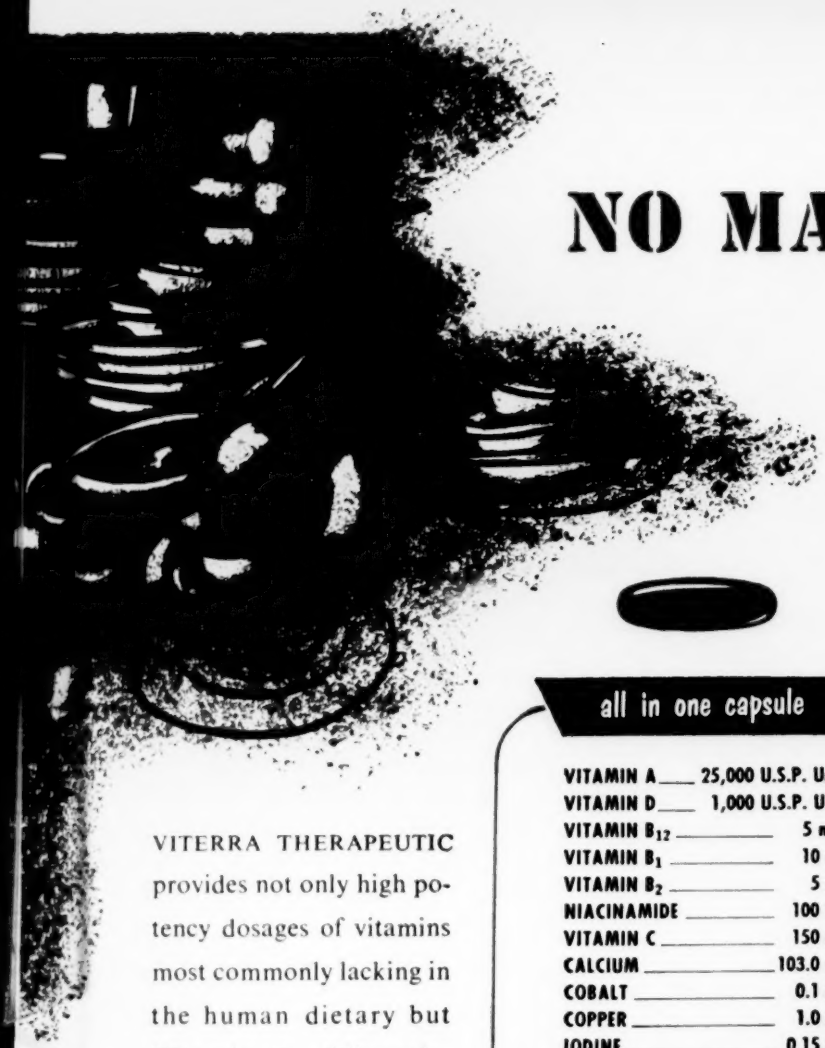
The same lesions appear in about 33% of nondiabetic conditions, but rarely with any detriment to eyesight.

The physician who advises a free diet is assuming a grave responsibility, considering the well-known dangers of hyperglycemia. In the experience of James W. Sherrill, M.D., of the Scripps Metabolic Clinic, La Jolla, Calif., most patients willingly follow a strict regimen, if only to avoid unpleasant symptoms.

Poor diabetic control may be due to various factors:

- Assumption that diabetes involves carbohydrate rather than total metabolism.
- Calculation of diet from normal caloric requirements, disregarding the fact that ordinary amounts of food cannot be utilized.
- Misconception of average nondiabetic rations. Many healthy women need only 1,400 to 1,700 calories per day.
- Prescription of insulin for the obese.
- Failure to reduce surplus weight.
- Attempts to force-feed or fatten a thin, seriously diabetic individual.
- Short-cut efforts to control severe diabetes with 1 daily dose of insulin.
- Use of minimal insulin dosage, rather than enough for the maximal portion of each twenty-four hours.

Diabetic retinitis; the relationship between retinal degenerative changes and the degree of diabetic control. Bull. Scripps Metabolic Clin. 2:1-17, 1951.



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1. Spies, T. D.: Section on Metabolism and Nutrition 1948 Year Book of Endocrinology, Metabolism and Nutrition (Year Book Publishers, Inc., Chicago) p. 265.

2. Mann, G. V., and Stare, F. J.: Nutritional Needs in illness and Disease, J.A.M.A. *142*:409 (Feb. 11) 1950, p. 412.

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Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Surgery of Inguinal Hernia*

QUESTION: Is Cooper's ligament better than the inguinal ligament for hernia repair?

Comment invited from
Alfred H. Iason, M.D.
Donald J. Ferguson, M.D.
Amos R. Koontz, M.D.
Jack M. Farris, M.D.
W. W. MacGregor, M.D.
Karl Morgan Lippert, M.D.
Dan C. Donald, M.D.
C. C. Burton, M.D.
Thomas G. Orr, Jr., M.D.
Leigh F. Watson, M.D.
Frank V. Theis, M.D.
Jackson K. Holloway, M.D.

► TO THE EDITORS: Dr. A. J. H. Rains's statement that Cooper's ligament, rather than the inguinal ligament, should be used as a scaffolding is probably correct.

Cooper's ligament is a fascial extension backward for ½ in. along the iliopectineal line, where it blends with the periosteum. It is, in reality, a lateral continuation of the lacunar ligament, is composed of a thick, strong fascia formed by a fusion of the aponeuroses of most of the abdominal wall musculature, and is anchored securely enough to withstand the pull of these muscles. The inguinal ligament, on the other hand, is a much more friable structure than its continuations, the lacunar and Cooper's ligaments.

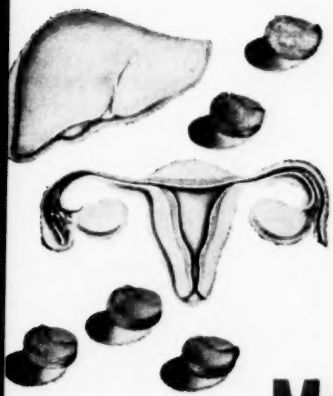
Suturing of the conjoined tendon and transversalis fascia to Cooper's and lacunar ligaments is *sine qua non* for the formation of an inguinal obturator. It is advisable to use nonabsorbable suture material.

However, the utilization of muscle tissue, especially the weak cremaster, as indicated in the article, defeats the purpose of the procedure. Any ligature that compresses a muscle almost completely eliminates its myodynamic potentialities. Although I am in accord with Dr. Rains's use of Cooper's ligament, in my experience, the imbrication of conjoined tendon, transversalis fascia, or other fibrous tissue structures would be physiologically more efficacious. His attempt partially to eliminate the hiatus at the deep ring is an important phase in hernia repair. Whether we consider this opening as a shutter, as suggested by Lytle, or as a sliding valve is immaterial. The procedure is excellent.

There is a degree of danger in this type of surgery in the hands of one who is not well acquainted with the anatomic structures in the area.

*Modern Medicine, June 1, 1952, p. 81.

the modern concept in menopausal therapy...



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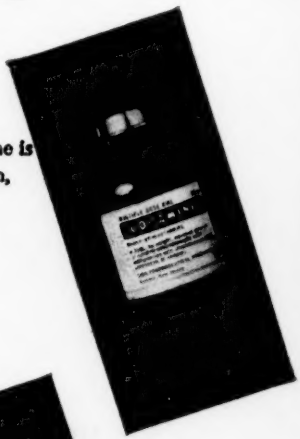

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1. Mattle, E.: Current Med. Dig. 19:23, 1952. 2. Krantz, J. C., Jr.: Current Med. Dig. 19:27, 1952.
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The danger of penetrating the external iliac, femoral, deep circumflex iliac, or the inferior epigastric vessels is always present. It may be advisable to expose and visualize the femoral vein to avoid inadvertent damage to it. An anomalous obturator vessel may be encountered.

In brief, in proper hands, the procedure as outlined by Dr. Rains is a step forward in our concept of hernia repair. The recurrence rate should diminish.

ALFRED H. IASON, M.D.
Brooklyn

► TO THE EDITORS: At the University of Minnesota Hospitals, we are using both types of repair. A recent three- to seven-and-one-half-year follow-up study of inguinal and femoral hernias repaired here by various operations using the inguinal ligament revealed an over-all recurrence rate of 10.8% (Ferguson, D. J. *Minnesota Med.* 32:697-701, 744, 1949). Cooper's ligament repairs have been done too recently for a comparable follow-up. However, no hernia repaired according to McVay's technic is as yet known to have recurred.

Cooper's ligament is theoretically preferable to the inguinal ligament as the lower margin of repair, because it is more fixed and stronger and is the real lower border of the inguinal-femoral region. However, use of this structure is considerably more difficult and time consuming than is suture of the more superficial inguinal ligament.

Moreover, unless the operation is done strictly according to the technic of McVay, with a proper relaxing incision, definition of the transversus aponeurosis and fascia, and an uninterrupted suture line extending from the pubic tubercle to a snug abdominal ring, the theoretic advantages may be lost. The technic described by Rains is not as meticulous or complete as that of McVay, and the mere placing of a few sutures in Cooper's ligament is perhaps no improvement over using the inguinal ligament.

The final answer to the question under discussion will be provided only by better controlled follow-up studies than have yet appeared.

DONALD J. FERGUSON, M.D.
Minneapolis

► TO THE EDITORS: The type of operation chosen for hernia repair should fit the anatomy of the individual patient. One of the reasons for failures is that too many surgeons use a preconceived stereotyped procedure and pay too little attention to the variations in hernia anatomy.

McVay and Anson have pointed out that the conjoined tendon and Cooper's ligament are in the same fascial plane, while the inguinal ligament is in a superior fascial plane, the same plane as the aponeurosis of the external oblique and the fascia lata. It would seem logical, then, to suture the conjoined tendon to Cooper's ligament as a routine procedure, rather than to suture the conjoined tendon to Pou-

part's ligament. If the latter two structures were sutured together, it would mean suturing a structure in a deeper fascial plane to one more superficially located.

It should be pointed out, however, that to approach Cooper's ligament, one must go through the transversalis fascia in Hesselbach's triangle. If this fascia is strong or sufficiently strong to be repaired, it would seem best to leave it undisturbed and not cut through it to do a Cooper's ligament repair.

The Cooper's ligament repair then seems peculiarly suitable to direct or recurrent hernias in which the transversalis fascia is either very weak or absent. In some indirect hernias, especially large scrotal hernias, Hesselbach's triangle may be very contracted due to the pushing mesially of the deep epigastric vessels by the large hernia sac. In these cases the fascial situation is almost always the same as that in direct hernia.

When the Cooper's ligament operation is used, the ligament should be exposed thoroughly before any sutures are placed. This is not the practice of some surgeons. On the contrary, they place the sutures blindly. This is bad for two reasons. In the first place, if areolar or adipose tissue is left on the structures which are to be sutured together, the union will not be firm. Secondly, unless the ligament is thoroughly exposed so that the sutures may be placed under vision, one may encounter severe bleeding from aberrant vessels or may injure the external iliac vein.

No matter what the type of repair, the importance of using nonabsorbable sutures seems obvious. The success of the repair depends upon the sutured structures remaining in close apposition until firm healing ensues. The rate of absorption of catgut is variable and the material cannot be definitely depended upon to stay in place until firm healing is accomplished. Recurrence rates have been repeatedly reported as higher when catgut, rather than silk, was used. To use absorbable sutures is only to invite an unduly high recurrence rate and to bring the operation into disrepute.

Also, no matter what the type of repair, early ambulation is a great adjunct to the operation. The patients void better. Circulation, and therefore healing, are improved. And patients are kept in positive nitrogen balance.

Judging the relative merits of different hernia operations by statistics is very misleading. Quoted recurrence rates are generally all-inclusive and include not only results from surgeons of indifferent skill but also those from experienced surgeons who are handicapped at the outset by having a great many difficult and neglected cases which could have been handled much more easily and with much better results had the patients been seen in earlier stages. To judge the recurrence rates quoted by any individual surgeon, one should know the degree of severity of the cases which are reported by him.

AMOS R. KOONTZ, M.D.
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► TO THE EDITORS: A perusal of the literature pertaining to inguinal hernia indicates an increasing dissatisfaction on the part of many surgeons with the inguinal ligament as a buttressing structure in repair of anatomic defects in the groin. In the United States, most analyses of large series of cases which have had adequate tests of time reveal recurrences in excess of 10% in direct hernias and 7% in indirect hernias. Actually, Andrews and Bissel *(Surg., Gynec. & Obst.* 58:753-761, 1934) recorded an incidence of recurrence in direct hernia of 27%.

When operating for recurrences after a Bassini operation, for example, it is frequently apparent that there is no evidence of union between the muscle mass (conjoined structures) and Poupart's ligament. Suture of the conjoined structures to Poupart's ligament is fallacious in its concept because:

1] Nowhere in human architectural economy is muscle tissue employed as a buttress. Rather, it has four functions: motion, locomotion, control, and stabilization.

2] Muscle fixation resulting from suture will give rise to atrophy from disuse, and if separation should occur between the conjoined structures and Poupart's ligament, the resultant muscle layer is even weaker than before.

3] About 75% of the recurrences recorded in British military hospitals came through the internal ring, and not through the posterior wall of the canal. Therefore, most efforts to reinforce the floor of the canal are ill-conceived—particularly when dealing with indirect hernia. Simple ligation of the sac is usually sufficient to cure most ordiary indirect hernias. There are numerous figures to support this stand. This has been emphasized by Hoguet *(Surg., Gynec. & Obst.* 37:71-75, 1923) who has reported 827 consecutive operations for indirect inguinal hernia without a recurrence.

As a matter of fact, a discussion of Cooper's ligament hernia repair is concerned in no way with the problem of indirect hernia. The problems of direct and indirect hernia are just as unrelated as those of cholecystitis and appendicitis, and the best results in operations for hernia are achieved by the experienced surgeon because of his ability to recognize the variations in pathologic anatomy at the operating table.

We have employed the principle of Cooper's ligament herniorrhaphy when there is a need for repair of the floor, as in direct hernia, since its original description. This experience over a period of more than ten years has resulted in a great deal of satisfaction and an improvement in the recurrence rate in direct hernia.

Many who have attempted this operation have had difficulty in utilizing Cooper's ligament because of omission of certain technical features. The operation is somewhat more difficult than the standard hernia operation but, once mastered, is an effective implement for all types of complicated hernias.

JACK M. FARRIS, M.D.
Los Angeles

► TO THE EDITORS: I cannot see why Cooper's ligament should be used in any form of hernia repair. As we know, it is merely a continuation upward of the conjoined tendon or Gimbernat's ligament.

To suture tissue to Cooper's ligament, as advocated by McVay, strong nonabsorbable suture material is used. My objection to this procedure is that it defeats the normal principle of hernia repair by suturing tissues under tension. Again, as brought out by Wayne Babcock, in the October 1927 issue of *Surgery, Gynecology and Obstetrics*, "Great caution must be taken in the McVay technic as the suture line may impinge upon the femoral vessels."

I wish to refer you to research done by me on the subject of hernia, published in *Surgery, Gynecology and Obstetrics* in October 1929. Another article about my operative treatment was published in the same journal in February 1930, and a more recent article appeared in *Annals of Surgery*, November 1945.

W. W. MAC GREGOR, M.D.
Detroit

► TO THE EDITORS: Inguinal hernia has, without a doubt, been the most discussed subject in surgical annals and more variations in technic have been offered than can be conceived for any other type of surgical procedure. This indicates one thing: Inguinal hernia is not a static subject; each inguinal hernia presents its own individual characteristics based upon the absence or inadequate development of certain anatomic structures. I shall quote from a previous article of my own:

> A hernial operation is a plastic operation of the highest order, demanding not merely an appreciation of simple esthetic approximation of tissue, but a thorough knowledge of the architectural mechanics involved. . . . It has been pointed out that an intact falx inguinalis aponeurosis, or the so-called conjoined tendon, is present in less than 20 per cent of the individuals. Any operation therefore founded upon such an inconstant structure as the conjoined tendon is doomed from the start to failure, proportionate to the presence of that structure. Add to this the personal error of the surgeon's failure to recognize the structures before him and the lack of appreciation of the etiologic factor productive of a hernia, and the appalling high ratio of recurrence is easily understood.

What has been said with respect to operations based upon the architecture of the conjoined tendon may, with certain reservations, be applied to the Cooper's ligament operation. The perfect operation has not yet been devised. Successful repair of a hernia should result in an elastic abdominal wall rather than a rigid one. Under sudden or prolonged strain a rigid wall will eventually stretch and the elastic one will give and contract with the variations in stress.

KARL MORGAN LIPPERT, M.D.
Columbia, S. C.

► TO THE EDITORS: Cooper's ligament and the component parts of the transversalis fascia should be utilized, not the inguinal ligament, for successful repair of all inguinal hernias except those found in children.

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174 patients had operations for large oblique, direct, and recurrent inguinal hernia. Of the cases, 33 had bilateral hernia on which operations were done, making a total of 207 operations for this type of hernia for the above period. A survey of the work through questionnaires and interviews shows no recurrences.

The size of the hernial cleft averaged 7.8 by 6.7 cm. The largest was 13.2 by 10.1 cm. The length of time in the hospital was formerly ten to twelve days. Now the average is six days, although ambulation, going to bathroom and so on, is permitted one day following surgery. The average length of time before returning to hard labor is four weeks. Lighter duties are resumed in two weeks. Formerly, when the Bassini operation or one of its modifications was employed, the hospital stay was two or three weeks and the period before return to hard labor was three months.

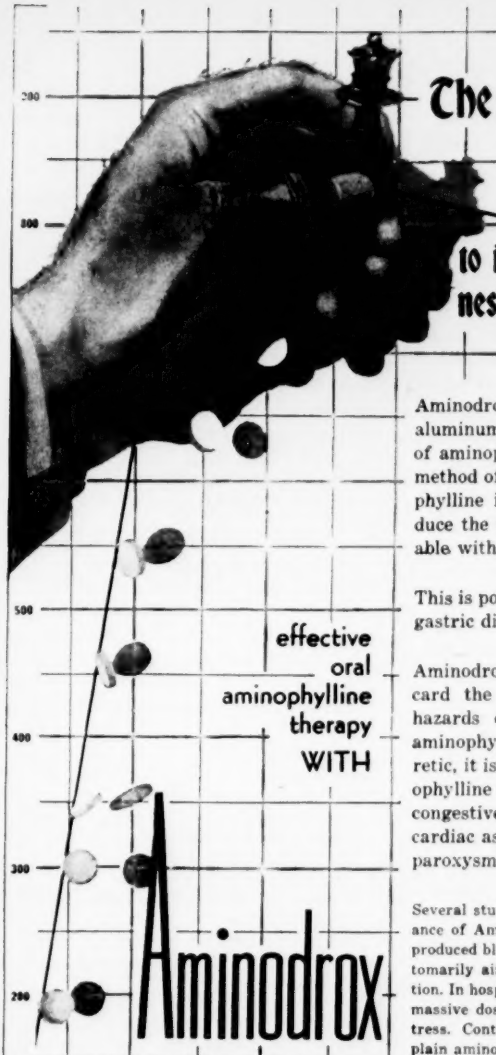
Prior to 1939, the Bassini operation or a modification was employed in which various deep layers of the inguinal space were sutured to the inguinal ligament. Recurrences resulted at the rate of 5 or 10% in the oblique hernia and a higher percentage in the direct and recurrent hernia.

The postoperative course of the patient in which the component parts of the transversalis fascia and Cooper's ligament were employed has been a smooth one with the following exceptions: [1] In 7 cases wound infection occurred and the sutures (silk or cotton) had to be removed before healing took place, but in none of the cases did any weakness of the supporting structures develop following the infection; [2] In the beginning of this type of operation, a transient swelling of the testis occurred in a few cases but subsided a short time following operation. This latter complication was noted chiefly in the recurrent cases.

During the past one and one-half years neither infection of the wound nor swelling of the testis has occurred. The elimination of these complications can be attributed to the following points: More emphasis has been given to the preparation of the skin at time of operation and greater care has been given to freeing the cord of adhesions and avoidance of pressure to the cord in the closure of the arms of internal abdominal ring, thus preventing interference to the blood supply of the spermatic cord and the testis.

The success in the repair of large oblique, direct, and recurrent hernia will depend on full knowledge of the pathology responsible for the hernia formation and employment of measures for the correction of said pathology. The pathology of all inguinal hernias is not the same. To obtain the maximum results, it is necessary to consider the anatomy of the inguinal region and the pathologic changes that accompany the different types of hernias in the inguinal-supported tissues.

Since the transversalis fascial support is not involved in small oblique hernia, usually seen in children, the treatment consists simply of removal and closure of the pat-



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* Cronheim, G., Justice, T. T., and King, J. S., Jr., A New Approach to Increasing Tolerance of Oral Aminophylline—to be published.
* Justice, T. T., Jr., Allen, G., and Cronheim, G., Studies with Two New Theophylline Preparations—to be published.

ent processus vaginalis (sac) down to the fold of the peritoneum and closure of the internal abdominal ring as is done in the Bassini operation.

The chief pathologic features in large oblique and direct hernias are the giving way of the transversalis fascial support and varying degrees of dilatation of the internal abdominal ring. The surgery for these hernias should be directed toward restoring these structures to a normal state.

Special emphasis is placed on the importance of including the iliopubic tract in the suture line for closure of the transversalis fascia to maintain the lateral support of the fascia. In the oblique hernia, the dilated internal abdominal ring should be closed by identifying its arms and approximating them with interrupted sutures above the spermatic cord.

In the operative management, care should be taken to maintain hemostasis, thus preventing hematoma and serum accumulation which might invite infection and weaken the tissue support. Unnecessary trauma of the tissues, including the nerve supply, which might result in weakened muscles should also be avoided. The operative field, particularly the bed of the transversalis fascia, should be cleared of areolar and adipose tissues and straggling muscle fibers for good visualization and prevention of incorporation into the suture line, which would weaken ligamentous support.

DAN C. DONALD, M.D.
Birmingham

► TO THE EDITORS: It would probably be more appropriate to consider whether Cooper's ligament or inguinal ligament repair is the preferable operation in terms of the type of hernia or mural weakness present rather than which is the better operation for all hernias. The criteria for each repair should be known to the surgeon and the operation individualized.

Indications for *inguinal ligament* hernia repair are:

- Indirect sac with moderate dilatation of the abdominal ring
- Indirect direct sac (bilocular) with associated relaxation of the posterior wall
- Small direct sac without attenuation of transversalis fascia.

Criteria for *Cooper's ligament* repair are:

- Absolute
  - Femoral or interligamentous hernia
  - Inadequacy of the inguinal ligament
  - Multiple coexisting sacculations
- Equivocal
  - Large direct hernias
  - Large indirect hernias with loss of obliquity of the canal
  - Most recurrent hernias
  - Diverticular hernias
  - Local or generalized mesenchymal weakness

There are many technical variants of either inguinal or Cooper's ligament hernia repair which cannot be described and evaluated in a brief comment. Each patient's hernia should be weighed against the above criteria in determining the operation which should be employed. Moreover, one cannot escape the fact that consideration should be given to the professional qualifications and experience of the surgeon. A three-maneuver Coop-

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er's ligament repair with meticulous reinforcement of the transitional area is a more formidable procedure than an inguinal ligament repair. The details of Cooper's ligament repair have been described and illustrated a number of times in the literature but not in a surgical text.

In our clinic, more than 5,000 hernia operations have been performed in the last eighteen years. Out of this relatively large group, there have been 625 Cooper's ligament operations, which is about 12% of the total. After carefully studying this series, from which several statistical reports have been published, including one group which was followed for ten years, we feel that this is a representative ratio between the two types of major operations. The ratio has remained pretty constant the past few years.

The trihedral space which lies in the inguinopectineal sulcus and contains the inguinal canal is usually not thought of as a trilateral space. It is bounded by the transversalis fascia and Cooper's ligament posteriorly, the interligamentous space and the inguinal ligament inferiorly, and the external oblique aponeurosis and, in part, the internal oblique fibers anteriorly. In an inguinal ligament repair with displacement of the cord, the trihedral space is bisected, whereas in a Cooper's ligament repair this space and the cord are excluded.

It is our opinion it would be unwise and quite unnecessary to employ Cooper's ligament as an anchorage in all hernia repairs. The slight reduction in recurrence rate to be achieved by this procedure in comparison to the inguinal ligament repair would not justify routine performance of the more formidable operation.

C. C. BURTON, M.D.
Dayton, Ohio

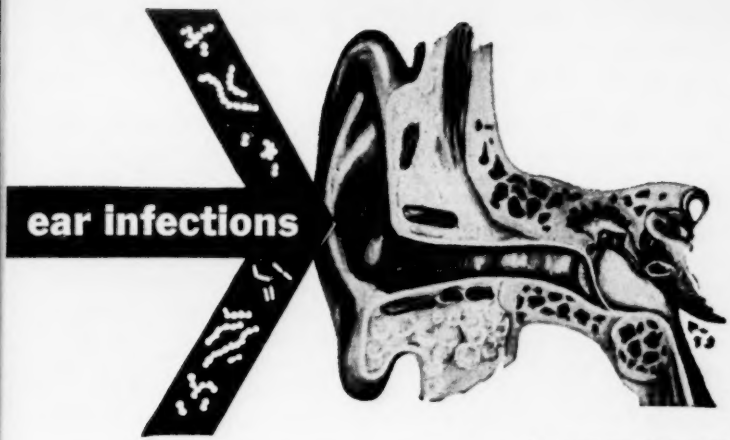
► TO THE EDITORS: I believe that generally the older standard methods of herniorrhaphy using the inguinal ligament are adequate in young, well-muscled patients. But in the older age group, where so often tissues are attenuated, I prefer a repair using Cooper's ligament for anchorage, especially in the case of direct hernia.

Personally, I like to use Halsted's fascial flap of anterior rectus sheath either primarily sutured to Cooper's ligament (Farris' technic) or as a secondary barrier when sutured to Poupart's ligament over a classical McVay closure of the abdominal wall.

THOMAS G. ORR, JR., M.D.
Kansas City, Mo.

► TO THE EDITORS: With the Cooper ligament operation there has been a lower percentage of recurrences than with the inguinal ligament operation (Bassini); hence, this procedure is steadily supplanting the latter in popularity, although the Bassini procedure presents fewer technical difficulties.

Babcock recognized the many advantages of suturing the transversalis fascia to Cooper's ligament. After using the operation, he pub-



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References: 1. Salvin, S. B. and Lewis, M. L.: External Otitis with Additional Studies on the Genus Pseudomonas, J. Bact. *51*:495, 1946.
2. Hayes, M. B. and Hall, C. F.: The Management of Otogenic Infection, Tr. Am. Acad. Ophth. *51*:149, 1947.
3. Senturia, B. H.: Diffuse External Otitis: Its Pathology and Treatment, Tr. Am. Acad. Ophth. *54*:147,1950.

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lished his technic and results in 1927 and called attention to the fact that suturing Cooper's ligament closed the area of greatest weakness, that is, the lower angle, the site of most recurrences.

Anson and McVay in 1938 published their studies on this subject together with the operative results secured by McVay.

This operation preserves the normal unhampered action of the fascia and muscles of the inguinal region. It is now known that the Bassini operation interferes with normal movement, thus weakening the lower part of the abdominal wall and favoring rather than preventing recurrence. Since the lower fibers of the transversalis and of the internal oblique fascia are normally attached to the fibrous covering of the pubic bone, the ligamentum pubicum superius (Cooper's ligament), and not to the inguinal ligament, it is logical to adopt the suggestion of Babcock and to suture the inferior aponeuroses of the internal oblique and the transversalis fascia to Cooper's ligament.

The reluctance of some surgeons to adopt this operation is due in part to their unfortunate experiences with nonabsorbable suture material or to unwise attempts to use nonabsorbable suture material as freely as absorbable catgut. This operation is best carried out with silk or cotton sutures, thus involving a special technic. Material of the smallest size is to be preferred; stitches should not be too close together; continuous sutures should never be employed; all ties and knots should be cut short so as to leave a minimum amount of nonabsorbable material in the wound, and ligatures should be used sparingly.

A straight cutaneous incision is made nearly parallel with the inguinal ligament and ½ in. above, extending from the internal ring to the lower middle part of the external ring and, in large hernias, to the upper middle part of the scrotum, just below the external ring. The length of this incision should be 2 to 3 in. in children and 3 to 4 in. in adults.

When the incision is deepened, the superficial epigastric and superficial circumflex iliac veins are seen crossing the field. These should be picked up and divided between hemostats.

To expose Cooper's ligament properly the incision must be extended considerably lower than that used with the Bassini operation. It should curve downward to the upper part of the scrotum.

The most important step of the operation is the suturing of the transversalis fascia to Cooper's ligament. If the hernia is large, the aponeurosis of the internal oblique fascia is also sutured to the ligament. At no time is the red muscle of the internal oblique included in the sutures. If the red muscle is stitched, it quickly "cuts out" and paves the way for early recurrence of the hernia. The cord should be handled as little as possible. It should be retracted with an instrument that does not compress it. The common practice of passing a strip of gauze beneath it may cause torsion of the cord when the latter

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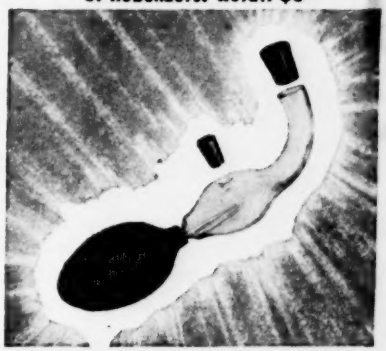

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is replaced in the internal ring next to the peritoneum.

With the cord gently retracted to the inner side, the first stitch is taken in the form of a purse-string suture of the fascia around the internal inguinal ring with heavy silk or cotton No. 30. A similar partial purse-string stitch in the transversalis fascia closes the internal ring around the spermatic cord. A heavy silk or cotton No. 20 suture on a round-pointed full-curved needle is passed through the transversalis fascia and the aponeurosis of the internal oblique. Next, the needle passes outward through the thickened Cooper ligament along the upper border of the pubic ramus. This stitch is usually taken about 2 in. from the spine of the pubis, while the femoral vessels are protected by the surgeon's index finger on the crest of the pubic bone. The highest stitch is placed first and tied, usually 1 to 2 in. laterally from the pubic spine. This procedure is to protect the femoral vessels. The 2 sutures closest to the pubic spine pass through the lacunar (Gimbernat's) ligament as well as Cooper's ligament. In all, 4 or 5 sutures are used, and they should be No. 5 heavy braided silk or No. 20 cotton.

LEIGH F. WATSON, M.D.
Los Angeles

► TO THE EDITORS: There is no indication that the use of Cooper's ligament is superior to the use of Poupart's ligament in the routine repair of direct inguinal hernia or prevention of direct or indirect recurrences. More important is a careful "scaffolding" with the transversalis fascia instead of the conjoined tendon, which offers a very poor layer of support.

Only when the surgeon encounters a thin and frayed Poupart's ligament might the use of Cooper's ligament be indicated. The greater danger of constricting or injuring the femoral vein when Cooper's ligament is used should not be overlooked. I cannot recall a single instance of recurrence of either a direct or indirect hernia that could be attributed to using Poupart's rather than Cooper's ligament in the repair.

FRANK V. THEIS, M.D.
Chicago

► TO THE EDITORS: Anatomically, a more correct reposition of structures in inguinal hernia repair can be effected by using Cooper's ligament and its underlying periosteum instead of Poupart's ligament as an anchor for structures brought down over a defective inguinal triangle.

Structurally, a more correct covering for a defect in the abdominal wall is secured by interposition of muscle between fascia and aponeurotic layers rather than by utilizing only fascia or aponeurotic structures.

The appreciation and use of the tendinous origin of the rectus muscle offers a new evaluation in reconstructing the floor of Hesselbach's triangle.

JACKSON K. HOLLOWAY, M.D.
Seattle

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Pulmonary Resection for Tuberculosis*

QUESTION: Should lung resection be done after failure of thoracoplasty without trial of pneumothorax or other conservative procedure?

Comment invited from
Maurice G. Buckles, M.D.
Lew A. Hochberg, M.D.
Lauren V. Ackerman, M.D.

► TO THE EDITORS: I don't see how pneumothorax could be instituted after thoracoplasty failure; thoracoplasty is usually done after all other conservative measures have been employed and about the only recourse we have after thoracoplasty failure is pulmonary resection. Of course this accounts for the decreasing instances of thoracoplasty and the increased incidence of pulmonary resection with removal of the focus of disease.

The above is simply a discussion of your question and not an answer. It has been our impression that revision thoracoplasties are relatively unsatisfactory. I am inclined to agree with Drs. Richard H. Overholt, Norman J. Wilson, and Leo J. Gehrig, that primary resection is frequently much more conservative than playing around with a disease over a long period of time.

MAURICE G. BUCKLES, M.D.
Columbus

► TO THE EDITORS: The question of whether one should resort to excisional surgery in cases of pulmonary tuberculosis without first attempting collapse therapy—pneumothorax, pneumoperitoneum, or thoracoplasty—has been posed by many phthisiologists and surgeons.

My feeling is that pulmonary resection has very definite (and elective) indications: [1] giant or tension cavitation, [2] parahilar cavitation, [3] thick-walled and fibrotic cavities, [4] cavities with considerable pericavitary infiltration, [5] diffuse unilateral disease with or without fibrotic changes, [6] chronic disease associated with bronchorrhea or secondary infection or both, [7] bronchostenosis with or without retention of bronchopulmonary secretions, [8] recurrent hemoptysis, [9] postpneumothorax or postthoracoplasty residual cavitation, [10] tuberculoma.

In cases having the disease confined to one relatively small area of lung, pulmonary resection is an elective procedure.

Using the above criteria as a yardstick in the selection of cases for pulmonary resection, I have found the end results very gratifying.

LEW A. HOCHBERG, M.D.
Brooklyn

► TO THE EDITORS: I agree with Dr. Richard H. Overholt and associates that resection is advisable after a thoracoplasty failure; either revision thoracoplasty or resection is used if thoracoplasty is inadequate but resection is preferable if the residual cavity is large and revision thoracoplasty is likely to be a failure.

LAUREN V. ACKERMAN, M.D.
St. Louis

*MODERN MEDICINE, May 1, 1952, p. 100.

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Evaluation of Treatment of Colles' Fractures*

QUESTION: What is the best method of management of Colles' fracture?

Comment invited from
Henry Milch, M.D.
Baxter L. Clement, M.D.
Leonard F. Bush, M.D.
Carl F. Freese, M.D.

► TO THE EDITORS: The incontrovertible fact stressed by Drs. John J. Gartland, Jr., and Charles W. Werley is that an excessively high percentage of poor results has been observed after Colles' fracture. Poor results which arise in consequence of a traumatic arthritis would, unfortunately, seem to be beyond our present means of therapy. Those which arise from improper reduction or inadequate fixation are a reproach to our therapy and should be corrected. In large measure they can be corrected.

Since those cases showing the most complete reduction have been listed among the excellent end results it would seem that the first and most important step must be an accurate analysis of the axial displacements which characterize Colles' fracture. Standard roentgenograms showing only the lower end of the forearm and the wrist are completely unsatisfactory for this purpose. In the study of any fracture, the whole bone, including both articular surfaces in anteroposterior and lateral projections, is a minimal requirement. In Colles' fracture anything less is improper.

Following careful determination of each of the four major axial displacements, each must be separately and completely reduced. In the interests of the patient and frequently at the risk of damage to the surgeon's hands the reduction should be performed under fluoroscopic control with frequent plate corroboration during the course of the treatment. From an over-all functional point of view, failure to correct the shortening and the torsional components gives worse results than failure to correct the dorsal displacement or even the dorsal angulation.

Maintenance of the position obtained at reduction by any type of splinting is uncertain. Position should be assured by the application of circular plaster of Paris molds in the Cotton-Loder position and without excessive padding. Let the surgeon beware of nerve and vascular compressions. It is his responsibility.

Colles' fracture is a serious fracture and its treatment is not beneath the dignity of even an accomplished surgeon. Though ideal cures cannot be hoped for in all cases, a great improvement may be confidently expected from careful attention to detail. In a certain percentage of cases, less than at present, unsatisfactory outcome must be anticipated as a consequence of damage to the blood supply at the site of fracture. If damage to the internal circulation of the bone is such that a six-week fixation is insufficient to secure adequately firm union, the functional disability which may develop will unquestion-

*MODERN MEDICINE, Apr. 15, 1952, p. 119.

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ably be less than that which will result from more prolonged immobilization. In older patients, because of the danger of stiffness to which Böhler has repeatedly called attention, the risk of incomplete anatomic reduction must be accepted and careful release of the limb from the position of choice to that of function must be undertaken after the lapse of two weeks.

HENRY MILCH, M.D.
New York City

► TO THE EDITORS: Malunited Colles' fractures are too common and result from lack of attention to fundamental principles. Early reduction under complete muscular relaxation is imperative and is best accomplished under well-administered general anesthesia.

The first step is careful analysis of satisfactory anteroposterior and lateral roentgenograms to determine the degree of displacement which must be corrected and to plan the proper maneuvers for reduction.

Continuous even traction is essential and can be obtained by the finger-trap attachment which leaves both hands of the operator free for manipulation of the fragments and application of plaster without loss of traction. Complete correction of impaction and dorsal tilt is important.

Reduction is best maintained by the "sugar-tong" type of splint reinforced with circular plaster which permits complete flexion in all the interphalangeal and metacarpophalangeal joints. The splint should remain undisturbed for at least five weeks.

Postoperatively the patient is instructed to use the fingers daily, not only actively moving them through maximum range, but to employ them in normal daily use. He is further instructed to abduct, anteriorly elevate, and internally and externally rotate the shoulder through its maximum range several times daily. Thus a frozen shoulder can be prevented.

BAXTER L. CLEMENT, M.D.
Red Bank, N.J.

► TO THE EDITORS: For the simple fractures of the transverse or oblique variety of the lower end of the radius, including the epiphyseal separations in children, we use the anteroposterior plaster splints with the wrist in flexion and with some ulnar deviation. By this method, when a complete reduction is accomplished, the end results are uniformly excellent.

However, in the complicated case in which the ulnar styloid is broken off and in which the distal end of the radius is comminuted, the problem is entirely different and requires a longer period of immobilization and a different type of treatment. In such instances, we have reduced the fracture and inserted a Kirschner wire in the first metacarpal and incorporated the wire in a cast with the wrist in palmar flexion and ulnar deviation. By maintaining this skeletal fixation for approximately eight weeks we were able to maintain quite good position but we had consider-

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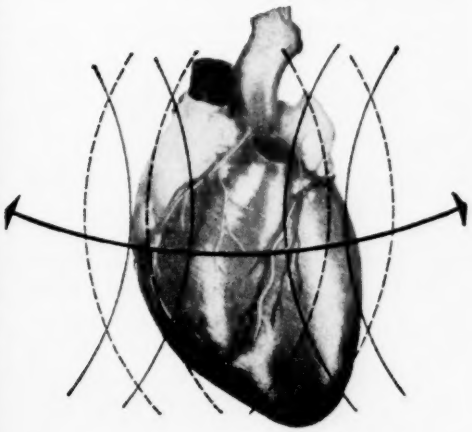

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able stiffness of the wrist and, although the end results were excellent, the period of disability lasted three or four weeks longer because portions of the hand and thumb were necessarily incorporated in the cast.

Recently, we have been using a method advocated by Dr. Anthony DePalma of Jefferson Medical School in which the fracture is reduced by placing the patient on his back on an Albee-Compere table and the hand is suspended overhead at right angles to the body. Countertraction is applied at the elbow. The fracture is held in a complete reduction at that time and an assistant pulls outward on the forearm to flex the wrist slightly.

A threaded Kirschner wire is inserted through the ulna into the radius, starting approximately 1 in. proximal to the ulnar styloid on the ulna and aimed directly for and through the radial styloid. As the wire approaches the skin at the radial styloid, it is withdrawn slightly and the wire is cut off on the ulnar side so that the end will be buried beneath the skin. While the arm is held in traction on the table, a simple circular cast is applied from approximately the metacarpophalangeal joint to the elbow. This cast is lightly padded. This wire is left in place for at least eight weeks and the fracture is protected by cast for that period of time.

At the present time we feel that this type of treatment may be the answer to this very common but troublesome type of fracture.

LEONARD F. BUSH, M.D.
Danville, Pa.

► TO THE EDITORS: Colles' fractures are best treated by manipulative reduction under general anesthesia, usually Sodium Pentothal.

A padded plaster of Paris cylinder cast extending from the distal palmar crease to the shoulder is applied. The hand is held in slight, 20 to 30°, palmar flexion and ulnar deviation. The elbow is maintained at 90° flexion. The forearm is maintained in supination.

The cast is split only if the fingers become swollen and discolored. The patient is not only urged to move fingers immediately postoperatively, but is given sedation that he may do so.

The cast is maintained for two weeks and then changed. The hand is placed in neutral position. At this time, if loss of reduction has occurred, further manipulation under anesthesia can be done, and cast reapplied.

The long arm cast is maintained for six to eight weeks and changed again if it becomes loose. At the end of this period roentgenograms are again taken. If the fracture is healed, no further splinting is necessary; if not healed, a circular plaster is reapplied from the distal crease to the elbow, with the hand in neutral position, for three to four weeks longer.

Some loss of function of a joint is inherent in any fracture which involves the joint surface, particularly if there is displacement. People never notice a 5 or 10° loss of dorsiflexion or palmar flexion if motion is painless. If an ordinary Colles' fracture is anatomically reduced and held as described, it is

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common to see a loss of the volar tilt that is normally present. This is to be expected in view of the pathology.

Colles' fractures result from falls on the outstretched arm with the hand in dorsiflexion. Compression occurs. The bone is pulverized for a variable distance, and the small pulverized pieces are driven into the main fragments. There is a greater pulverization dorsally in the radius. On reduction, this leaves a gap which is poorly filled with the pieces after reduction. In badly comminuted fractures, radial shortening is therefore to be expected. It is necessary to get shortening to get healing.

In these fractures, and also in fractures involving the radioulnar joint, it is our practice to excise the lower ¾ to 1 in. of the ulna. A cosmetic and excellent functioning hand is obtained.

Residual finger stiffness should never occur. It is the doctor's job —not the physiotherapist's—to see that the patient starts exercising postreduction. It is our custom to see the patient within twelve hours after reduction and be sure that he moves his fingers.

The patient must be instructed to fully flex and extend the fingers twenty to thirty times per hour. A painful wrist is very seldom seen one year later with this care.

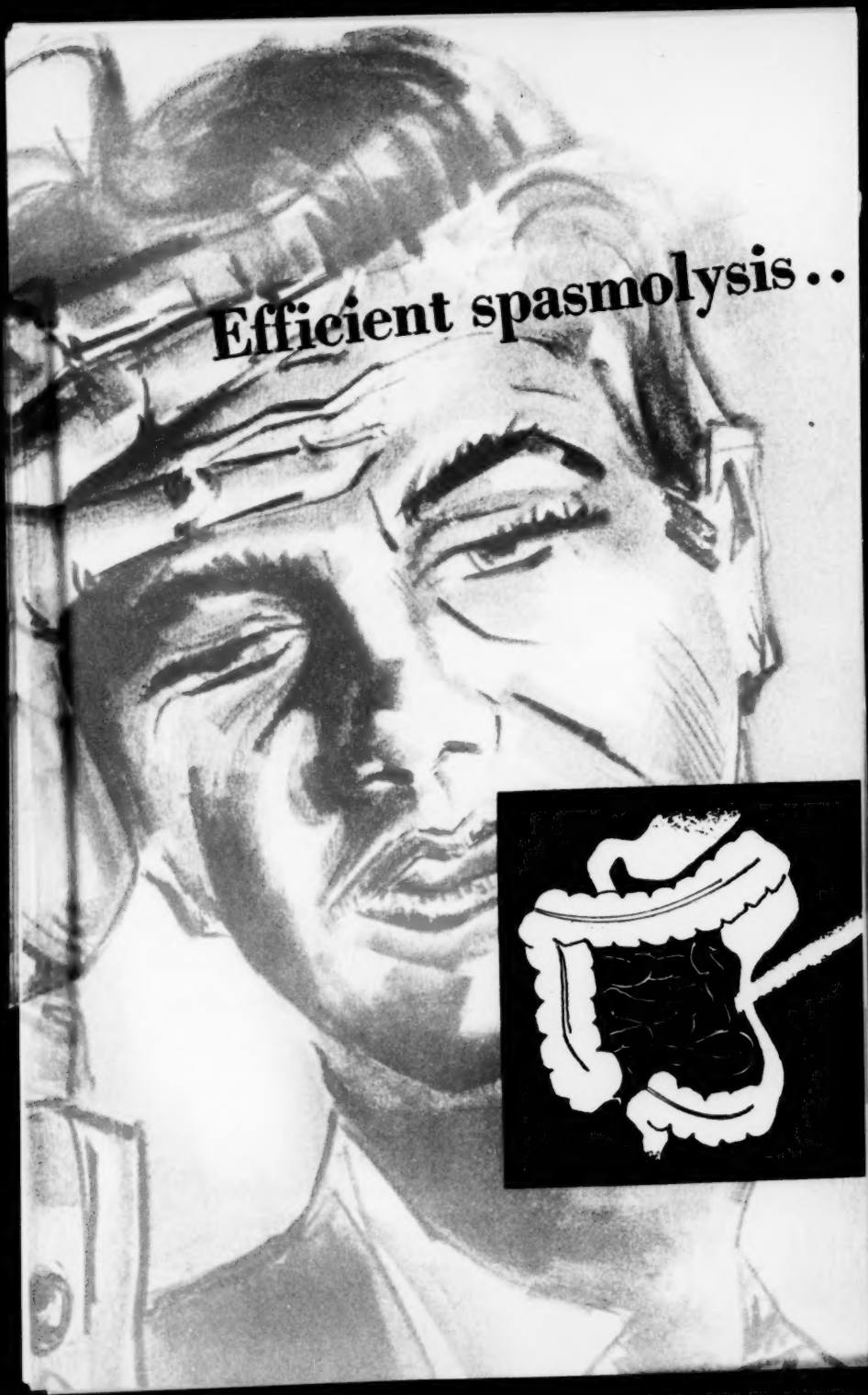
CARL F. FREESE, M.D.
Hempstead, L. I.

"What luck! The car I hit belonged to a doctor!"

"...and don't forget the VITAMINS!"

Lactation increases vitamin requirements at a time that is critical to mother and child. A balanced vitamin preparation is a dependable way of forestalling the development of a deficient state.

MERCK & CO., INC., RAHWAY, N. J.—as a major manufacturer of Vitamins—serves the Medical Profession through the Pharmaceutical Industry


Efficient spasmolysis . .

..in functional disorders

. . . such as irritable colon, emotional diarrhea, peptic ulcer, pyrosis; also for inflammatory diarrhea due to acute gastroenteritis or ulcerative colitis, and functional dysmenorrhea:

Elixir

BUTISOL® BELLADONNA

—has a more definite, efficient antispasmodic action because it combines in each 5 cc. (one teaspoonful):

1 • BUTISOL® SODIUM 10 mg. (⅙ gr.)—"intermediate sedative" which is "particularly useful in the field of daytime sedation."[1] The mild, relatively prolonged action of Butisol Sodium "makes it suitable for management of many functional disorders."[1]

2 • EXT. BELLADONNA 15 mg. (¼ gr.)—in its preferred and most effective form—the *natural* extract rather than the synthetic alkaloids.

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1. Dripps, R.D.: Selective Utilization of Barbiturates, J.A.M.A. 139:148 (Jan. 15) 1949.

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Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-223

THE CLUE

ATTENDING M.D: The next patient, a 65-year-old engineer, was admitted to the hospital with slight congestive heart failure. He has improved somewhat and is up and about, but digitalis seems to be of little benefit. Initially, I considered that the basis of his heart trouble was a combination of arteriosclerotic and hypertensive disease, but subsequent developments suggest a different etiology.

VISITING M.D: Usually digitalis is of distinct benefit in congestive failure due to coronary artery disease or hypertension. Failure to respond to this drug makes one consider the causes of so-called "high output" cardiac failure.

ATTENDING M.D: Right. However, I could find nothing to suggest thyrotoxicosis or vitamin B deficiency and he is not anemic. Nor have we found any signs of an arteriovenous aneurysm or emphysema.

VISITING M.D: Has the patient been well except for the slight cardiac symptoms?

ATTENDING M.D: He has several non-cardiac symptoms. One I found most intriguing—he insists that for the last two years he has actually grown shorter.

PART II

VISITING M.D.: Loss of stature is more often apparent than real. Arthritis, for example, by influencing posture, can make a patient seem shorter than he was. However, true loss of height does occur with a few illnesses which affect the skeletal system.

ATTENDING M.D: I must admit that I put little emphasis on this symptom at first, since the illness seemed primarily cardiac.

VISITING M.D: Suppose you tell me the history as the patient gave it.

ATTENDING M.D: Well, the presenting complaint was dyspnea on exertion and slight orthopnea, which had been gradually progressive for the past few months. No angina pectoris, cyanosis, or edema was noted. For several years he has been bothered with aching in the lumbar spine and hips, and occasionally the hips have been stiff and painful on movement. The patient ascribed these symptoms to arthritis. Also

(Continued on page 200)

From the Cradle to Old Age . . .

SAFE, EFFECTIVE BOWEL MANAGEMENT

Zymenol . . .

the *safe* lubricating laxative with healthful brewers yeast

Thousands of physicians consistently recommend all three products, one of which (Zymenol) has been giving excellent results in constipation cases for 19 years. Zymenol and Zymelose deserve your support, too, doctor ...for three good reasons:

Zymelose . . .

NEW sodium carboxymethylcellulose tablets and granules containing debittered brewer's dried yeast fortified with Vitamin B-1

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- Effective in diarrhea of infants, children and adults
- Controls the nausea and vomiting of pregnancy
- Effective in bacterial gastrointestinal toxicity
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Available: Bottles of 4 and 12 fluidounces.

8 important advantages for ulcer therapy—

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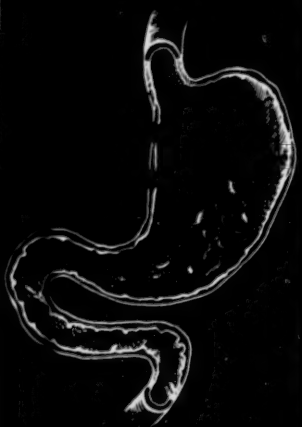

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In G.I. infections—diarrhea—nausea of pregnancy

In peptic ulcer

In hypertension, congestive heart failure and cirrhosis

for about one year he has had trouble with recurrent headaches and some dizziness.

VISITING M.D: Nothing very specific from a man in the 60's. A variety of diseases should be considered but by far the most common causes of such symptoms would be arthritis and arteriosclerosis. Was the physical examination more helpful?

ATTENDING M.D: Decidedly so. The patient's appearance is striking. He is a good-sized man but the head appears massive. The trunk is large with deep chest, kyphosis, and wide pelvis. By contrast, the extremities are rather frail. However, there was no evidence of rheumatoid arthritis, although the hip joint motion was limited.

VISITING M.D: You have said that you found no evidence of emphysema. Did not the thick chest and kyphosis suggest emphysema?

ATTENDING M.D.: Yes; however, diaphragmatic excursions were good and the vital capacity was normal. Furthermore, the expiration was rapid.

VISITING M.D: Good. Please continue.

PART III

ATTENDING M.D: The head, except for size, and the neck seemed normal. Scattered moist râles were audible in both lung bases posteriorly and the heart was enlarged to the left. Auscultation revealed only a soft systolic murmur at the apex. The blood pressure was 158/80 mm., the pulse 86. The abdomen was difficult to examine because the costal margins almost reached the iliac crests. The liver did not seem enlarged. The tibia bowed forward and out.

VISITING M.D: Any neurologic findings?

ATTENDING M.D: Auditory acuity was reduced, especially in the left ear. The other cranial nerves were normal, and superficial and deep sensation and motor power were intact throughout.

VISITING M.D: The physical appearance, I am sure, suggested a diagnosis to you. What about roentgen studies?

ATTENDING M.D: Roentgenograms of the skull revealed thickening of the diploë and areas of increased bone density, giving a sort of moth-eaten appearance. Shafts of the femurs were thickened with wide dense cortices, coarse trabeculation, and narrow marrow cavities. The pelvic bones and lumbar vertebrae were also involved.

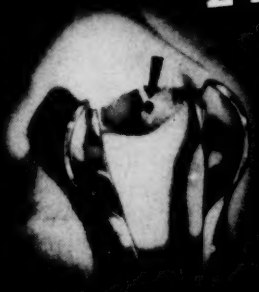
VISITING M.D: Did blood chemistries bear out the diagnosis?

ATTENDING M.D: Yes, the serum calcium and phosphorus were 5 and 1.2 mEq. per liter and the alkaline phosphatase was 30 Bodansky units. The acid phosphatase was normal.

PART IV

VISITING M.D: The roentgen findings are quite characteristic of osteitis deformans. So is the high alkaline phosphatase which reflects the widespread involvement and degree of osteoblastic activity. The normal calcium and

EPISTAXIS!



Epistaxis nosebleed like much more complicated hemorrhage may be so easily controlled with Koagamin By its direct action on the blood Koagamin reduces the clotting time in most cases as thus more useful than vitamin K indicated only in low blood prothrombin and requiring hours for effectiveness In such cases Koagamin is recommended in conjunction with vitamin K to effect faster control

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phosphorus levels help differentiate this illness from hyperparathyroidism, another disease which may cause decrease in body height.

ATTENDING M.D: Yes, but how does the heart failure fit in?

VISITING M.D: Very nicely. Bone involved by Paget's disease is extremely vascular. When enough bones are involved, as in this case, countless small arteriovenous communications develop which act exactly as does a traumatic arteriovenous aneurysm. Blood flow through diseased bone has been measured and found to be as high as 20 times normal. As a result, the cardiac output rises greatly and congestive failure may ensue.

ATTENDING M.D: Another cause of high output cardiac failure. What about treatment? Has any been successful?

VISITING M.D: We have no effective remedy for the underlying disorder. A diet rich in calcium, phosphorus, and vitamin D is recommended. Roentgen irradiation of the involved bones has reportedly been of value in some cases. Cardiac therapy, if needed, should include salt restriction and diuretics. As we mentioned, digitalis is often of little value when cardiac failure is due to an excessive cardiac output but probably should be tried. The prognosis is variable. Some cases become quiescent though many progress slowly to crippling deformity. Other complications include pathologic fractures, deafness, paraplegia, and osteogenic sarcoma.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Sept. 15 winner is

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BASIC SCIENCE *Briefs*

Diabetes

Glomerular Changes

Material that stains like fibrin has been observed at necropsy on diabetic persons between the basement membrane and the endothelium of the renal glomerular tufts. This substance, called the fibrin cap by H. J. Barrie and associates of the University of Toronto, occurs half as frequently as intercapillary sclerosis but is always associated with severe arteriosclerosis. A similar lesion, the capsular drop, between the epithelium and the basement membrane, rapidly becomes fibrous. The combination of fibrin caps, capsular drops, and fibrin-staining hyalin changes in the extraglomerular part of the arterioles is probably specific for diabetes.

Canad. M.A.J. 66:428-431, 1952.

Hematology

Release of Blood Elements

Arterial leukocytosis and thrombocytosis ordinarily appear immediately after intravenous administration of epinephrine without significant platelet increase in the venous blood, indicating that the pulmonary circulation is a sizable reservoir of formed blood elements. Similar results are obtained with the same amount, 0.1 to 0.3 mg., of *l*-epinephrine or norepinephrine. In 12 patients with neoplastic disease, chosen because of good cardiopulmonary status, Dr. H. R. Bierman and associates of the University of California, San Francisco, and cooperating agencies noted that the initial response began within thirty to sixty seconds in most cases and continued for at least five minutes before declining. The venous rise occurred thirty to one hundred and twenty seconds later. The constancy of the hematocrit and erythrocyte values excludes hemodilation and hemoconcentration as factors in the blood changes.

Blood 7:683-692, 1952.

Hematopoiesis

Antianemic Factor

The site of Castle's intrinsic antianemic factor in the pig stomach is apparently the pyloric region. Dr. E. Meulengracht of the Bispebjerg Hospital, Copenhagen, finds almost as great potency in the muscle as in mucous membrane. Like mucosa, muscularis functioned as intrinsic factor when combined with extrinsic factor in the form of liver residue or vitamin B_{12}. Small doses of either factor alone were weak or inactive but together the two elements caused a strong reticulocyte response and rise in the red cell count. Dried preparations of either the muscular or mucous layer in larger doses of 10 gm. three times daily produced complete remission in patients with pernicious anemia.

Acta med. Scandinav. 143:207-234, 1952.

A Medical "SLEEPER"

How an often neglected field of medicine may improve your practice

There are many indications that the growing field of muscle stimulation therapy has an important place in General Practice. Many alert modern physicians are finding this new field a progressive way to improve their practice. If you have ignored this field the following QUESTIONS & ANSWERS *may provide you with some of the information about muscle stimulation—and how it fits into your practice.*

Questions & Answers

Q: What are its therapeutic applications?

A: Adjunctive to massage to help prevent and treat muscle degeneration that may complicate the following conditions: fractures, nerve inflammations (Bell's Palsy), prolonged chronic illness (hypertension), incapacitating diseases (arthritis), pendulant abdomen due to stretching of the muscles (multiple pregnancies), and many others.

Q: What is meant by muscle stimulation?

A: The stimulation of a muscle motor point by means of an electrical wave of current (MULTITONE) thereby causing a contraction.

Q: What is MULTITONE?

A: MULTITONE is an instrument that can produce a sharp peaked wave (not a sine wave) of electrical impulse. When applied to a motor point it will cause the contraction of innervated voluntary muscle.

Q: Is this the only feature of MULTITONE?

A: No, MULTITONE also has

1. a continuous current
2. fast and slow interrupted currents.
3. a push and pull current.

Q: Is MULTITONE complicated to operate?

A: No, simply follow the Multitone Motor Point Chart and attach the pads to stimulate whatever voluntary muscles you select.

Q: Does it shock the patient?

A: No. MULTITONE is operated on less than 5 milliamperes of current. There is a minimum of unpleasant sensation. Most patients enthusiastically request further treatments and say they feel exhilarated.

Q: Is muscle stimulation and MULTITONE worth the expense?

A: Besides the clinical improvement in your patients' condition MULTITONE will add to your practice an entirely new source of income that has been neglected. Doctors have discovered that MULTITONE can pay for itself in a few weeks. Three convenient payment plans are available.

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Endocrinology

Testosterone Production

A healthy man probably secretes at most about 30 mg. of testosterone in twenty-four hours. Values were estimated for 1 subject by Dr. David K. Fukushima and associates at the Sloan-Kettering Institute for Cancer Research, New York City, from the amount of deuterium-labeled infused testosterone excreted in urine as compared to the subject's normal excretion of androsterone and etiochloanolone.

Federation Proc. 11:217, 1952.

Internal Secretions

Adrenals and Ascites

Either good adrenocortical function or replacement therapy is necessary to formation of ascites on the ordinary salt intake. After removal of the right adrenal gland, ascites was produced in dogs by constriction of the inferior vena cava in the thorax. Dr. James O. Davis and associates of the National Institutes of Health, Bethesda, Md., and the U.S. Public Health Service Hospital, Baltimore, observed renal function and metabolic balance before and for seven months after left adrenalectomy. Ascites continued to accumulate during administration of desoxycorticosterone acetate. Renal function and electrolyte excretion were unchanged except for disappearance of the fecal low sodium and high potassium typical of experimental ascites. Withdrawal of the hormone resulted in diuresis; adrenal insufficiency developed in ten to fourteen days.

Federation Proc. 11:336-337, 1952.

Hematology

Blood Histamine

Basophils contain about 50 times more histamine than any other type of blood cell. Distribution in the various blood elements was determined by Dr. Helen Tredway Graham and associates of Washington University, St. Louis. The micro dinitrofluorobenzene method was combined with differential cell counts. Blood histamine of healthy people averages 122 μg. per liter. The amounts per liter of each component and the percentages of total blood histamine are, respectively, plasma 5 μg., 4%; red cells 57 μg., 20%; platelets 1,200 μg., 3%; neutrophils 10,000 μg., 50%; basophils 5,000,000 μg., 15%; eosinophils, not over 10,000 μg., 1%. The determinations indicated that lymphocytes and monocytes probably contain very little histamine.

Federation Proc. 11:350, 1952.

Hormones

Postoperative Eosinopenia

Decrease in the number of circulating eosinophils after surgery is proportionate to the extent of the operative procedure, reaching the lowest levels about the fourth day. In 10 subjects with normal adrenal function, Drs. M. Nicol and M. Beltan of Rennes, France, found a reduction of from 20 to 90%, the preoperative levels being regained about the tenth day. The cell count is indicative of the adrenocortical status and determines the advisability of instituting hormone therapy.

Presse méd. 60:983, 1952.

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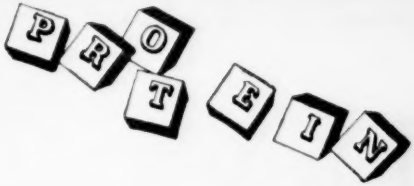

For Body Growth

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Abundant Energy

The daily diet must contain the so-called ential amino acids as first shown by Os-ne and Mendel[1] and more precisely de-d by Rose.[2] Once the essential amino ds are furnished, the remaining ones may taken in abundance from other protein rces to insure full growth and create ndant energy.

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Gelatine in the form of gelatinized milk has been found a valuable protein supplement helpful in allergies, celiac disease, colic and to increase the digestibility of the milk formula.[3] Its high specific dynamic action[4] which spares essential amino acids and furnishes amino acids for the continuous dynamic exchange of nitrogen in the tissue[5] helps the child to maintain the normal body heat. Furthermore, it contains an abundance of important glycine and proline necessary for hemoglobin formation.

1 Osborne, T.B. and Mendel, L.B., J. Biol. Chem. 17:325, 1914.

2 Rose, W.C., Physiol. Rev. 18:109, 1938.

3 Wolpe, Leon Z. and Silverstone, Paul C., J. Pediat. 21:635, 1942.

4 Lusk, G., J. Nutrition 3:519, 1931. Borsook, H., Biol. Rev. 11:147, 1936.

5 Schoenheimer, R., Ratner, S., and Rittenberg, D., J. Biol. Chem., 127:333, 1939 and 130:703, 1939.

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All Protein No Sugar

short REPORTS

Surgery

Anal Continence

Transplantation of the gracilis muscle to construct a rectal sphincter may restore anal continence, even though perineal innervation is defective or absent. Dr. Kenneth L. Pickrell and associates of Duke University, Durham, N. C., report success of the procedure for 4 patients with spina bifida with or without meningocele. The children learned to control bowel movements in three weeks to several months.

Ann. Surg. 135:853-862, 1952.

Anesthesiology

Muscle Relaxant

Rapid relaxation, complete paralysis lasting from one to several minutes, and full respiratory recovery within three minutes may be obtained with succinylcholine chloride, a synthetic muscle relaxant. In self-experiments, Dr. Otto K. Mayrhofer of the University of Vienna received by intravenous injection from 0.125 to 0.5 mg. per kilogram of body weight without side or after effects or cumulative action. No changes in circulation are observed with amounts several times the paralyzing dose. This curarizing agent, like decamethonium, acts by depolarizing the endplate region of the skeletal muscles and is destroyed so quickly, apparently by enzymatic hydrolysis, that no antidote is needed. To decrease tension in conjunction with anesthesia for abdominal and thoracic surgery, continuous drip with 0.1 to 0.2% in saline is recommended. Because of the small margin between the relaxing and paralyzing dose and rather painful muscle twitching at onset of action, succinylcholine chloride does not appear to be adapted to use with local analgesic agents. The drug, always administered by an anesthetist, has been used successfully to facilitate endotracheal intubation, to overcome laryngeal spasm, and to mitigate muscular contractions in electric convulsion therapy.

Brit. M. J. 4776:1332-1334, 1952.

Orthopedics

Fracture Healing

Broken bones mend most rapidly when fractured surfaces are held firmly but not too tightly together. In dogs with fractured ulnas compressed by calibrated springs, a force of 12 to 18 lb. applied across is most effective; pressures of 30 lb. or more induce cortical necrosis and interfere with repair. Drs. Z. B. Friedenberg and George French of the University of Pennsylvania, Philadelphia, believe a force above that which normally results from muscle tone is probably the best compressing force.

Surg., Gynec. & Obst. 94:743-748, 1952.

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Gynecology

Thephorin for Dysmenorrhea

Prompt, sustained relief from the subjective distress of primary dysmenorrhea may be achieved with antihistaminic agents. Dr. A. L. Maietta of Carney Hospital, Boston, uses Thephorin (2-methyl-9-phenyl-2, 3, 4, 9-tetrahydro-1-pyridindene hydrogen phosphate) because of the absence of side reactions, notably drowsiness. Usually a 25-mg. dose given at the onset of pain, followed by another one-half to two hours later, will suffice for the entire period and normal activities may be performed. Occasionally, administration every four hours is required. Effects were studied for two years in 20 cases. In each case placebos were substituted for the Thephorin tablets at some time during therapy. In no case were symptoms relieved by the placebos.

Ann. Allergy 10:324-327, 1952.

Goiters

Cancer from Thiouracil

Long exposure of thyroid tissue in mice to the goitrogenic drug thiouracil results in hyperplasia and may eventually cause malignant thyroid tumor. Inability of the thyroid gland to secrete thyroxine during treatment probably causes hormonal imbalance. Presumably, the actual stimulus of neoplastic growth is oversecretion of thyrotropin by the anterior pituitary lobe. At the National Cancer Institute, Bethesda, Md., thyroid glands of mice ingesting thiouracil weighed up to 30 times more than those of other animals. No signs of neoplasia were observed in the original thyroid, but pearly gray nodules of thyroid tissue often appeared in the lungs. To lengthen the period of hyperplasia, Dr. Harold P. Morris and associates transplanted thyroid tissue subcutaneously in young mice for several successive generations. Thiouracil was required for hyperplastic growth of the first implants, but with successive transplantings the implants finally changed to autonomous tumor with pulmonary metastases similar to the nodules first seen.

Tr. Am. Goiter Assoc. 1951, pp. 492-506.

Analgesic Agents

Vestibular Effects

Ambulatory patients receiving meperidine, morphine, or methadone display more signs and symptoms of toxicity than do bedridden patients given the drugs. The phenomenon is not frequently noticed with morphine because the agent is usually reserved for the seriously ill. Dr. Leonard B. Gutner and associates of New York University–Bellevue Medical Center and Lenox Hill Hospital, New York City, after a study by cold microcaloric and galvanic stimulation methods, report that morphine, meperidine, methadone, and Pantopon increase labyrinthine sensitivity. This may be partially responsible for the higher frequency of dizziness, nausea, and vomiting among the patients who are ambulant. Codeine exerts an opposite action, and acetylsalicylic acid produces no change in vestibular function. Dimenhydrinate is capable of overcoming the increased vestibular response.

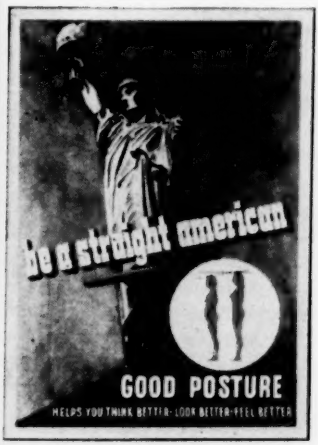
J. Clin. Investigation 31:259-266, 1952.

October 13-18th

14th national posture week

. . . makes America conscious of the value of good posture for better health

For the 14th consecutive year, once again National Posture Week will focus the attention of thousands of men and women on the importance of good posture for greater physical fitness and a more alert, healthier nation! And again also as in the past, every acceptable means of publicity will be used to dramatize good posture and point to its effect on health, efficiency and a greater and fuller enjoyment of life.



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Cardiology

Resistance to Epinephrine

Refractoriness of cardiovascular response can be induced in animals by treatment with epinephrine and related drugs. Doses of 1 to 100 mg. per kilogram were given to more than 250 cats, dogs, rabbits, and rats by constant or intermittent injection into arteries and veins. Drs. Patricia Flaum and William G. Clark of the University of California and Veterans Administration Center, Los Angeles, believe that the potent factor may be blood-borne, an element in the nonprotein fraction of serum. Refractoriness was not mediated by autonomic paralysis through pressor insult, from irreversible shock, or from damage to the central nervous system; by known depressors such as histamine; or by accelerated inactivation of epinephrine. Females, especially those pregnant, were less easily affected than males. Resistance was more difficult to produce and disappeared sooner when initial blood pressure was high.

Federation Proc. 11:346, 1952.

Neuropsychiatry

Surital and Electroshock

Patients with fractures, bony lesions, or questionable cardiovascular conditions apparently may safely be given electroshock therapy if preceded by intravenous administration of thiamylal sodium (Surital), which abolishes or greatly reduces muscular activity. Dr. Earle O. Brown, Jr., of the Ypsilanti State Hospital, Ypsilanti, Mich., has observed no complications in approximately 150 treatments, using only enough of the drug to produce unconsciousness without destroying the corneal reflex. Preliminary anxiety is reduced and subsequent cyanosis and rise in blood pressure and pulse rate are significantly lessened by the technic employing thiamylal. The compound, an extremely short-acting thiobarbiturate identified as the sodium salt of 5-allyl-5-(1-methylbutyl)-2-thiobarbituric acid, was infused at the rate of 1 cc. per second, in doses ranging from 1.9 to 7.7 gr.

Arch. Neurol. & Psychiat. 68:43-47, 1952.

Antibiotics

Fungi Inhibitor

An antifungal agent closely resembling fungicidin has been isolated from a culture of *Streptomyces aureus*. Both the *S. aureus* antibiotic and fungicidin are solely antifungal, having no activity against bacteria or actinomycetes. Ultraviolet absorption spectra of the two agents are identical. A comparison of antibiotic spectra reveals a great similarity of sensitive organisms, with only slight differences in inhibitory concentrations. According to Dr. Frederick Raubitscheck and associates of Rutgers University, N. J., *S. aureus* produces the antifungal agent in the broth, while fungicidin is formed chiefly in the mycelium. The *S. aureus* antibiotic is effective against *Candida albicans* and a number of pathogenic fungi. Allantoic injection of this agent will protect the chick embryo from *C. albicans* injected simultaneously into the yolk sac.

Antibiot. & Chemother. 2:179-183, 1952.

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VAGINAL GEL

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Ortho-Gynol® vaginal jelly—ricinole'c acid 0.75%, boric acid 3.0%, oxyquinoline sulphate 0.025%, p-Diisobutylphenoxypolyethoxyethanol 1.00%.
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PRECEPTIN vaginal gel contains the active spermicidal agents p-Diisobutylphenoxypolyethoxyethanol and ricinoleic acid in a synthetic base buffered at pH 4.5.

Ortho Pharmaceutical Corporation

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Cardiology

Digitalis Arrhythmia

Dilantin eliminates ectopic ventricular activity due to myocardial infarction or to overdosage with digitalis. When 4 patients received 0.6 gm. daily in divided doses, arrhythmia decreased or vanished in every case, as did subjective symptoms. Dr. Lois Mosey and associates of Boston University, Boston, and Cushing Veterans Hospital, Framingham, Mass., also counteracted effects of ouabain overdosage in dogs, with irregularities ranging from multifocal ectopic beats to ventricular tachycardia. Total doses of Dilantin were 10 to 30 mg. per kilogram, infused at the rate of 5 mg. per kilogram per minute. Duration of response was thirty minutes to three hours. In 2 cases, nystagmus and tremor resulted.

Federation Proc. 11:377-378, 1952.

Experimental Surgery

Artificial Bile Duct

Tubular skin grafts implanted in the greater omentum of dogs survive, heal, and function as biliary ducts for as long as eight months without the development of obstruction or stasis. The tube has a continuous lining of skin, a mobile vascular pedicle, and sufficient resistance to survive in the presence of bile. Slight to moderately severe hepatic cirrhosis and pericholangitis are likely to occur within six to eight months in animals deprived of the sphincter of Oddi. Drs. James R. McCorriston and David W. MacKenzie, Jr., of McGill University and Royal Victoria Hospital, Montreal, use a two-stage technic to implant the tubes in dogs and rabbits. The graft, a rectangular skin graft, sutured about a lucite rod with the dermal surface out, is embedded in the mesentery. Between two and four weeks later, the splint is removed and the tube, after being flushed with saline, is anastomosed to the gallbladder at one end and to the duodenum or jejunum at the other.

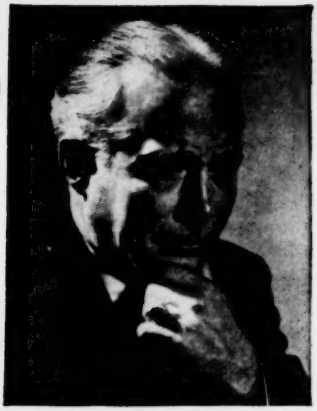
Canad. M.A.J. 67:15-19, 1952.

Chemotherapy

Resistant Tuberculosis

Use of pyrazinamide for pulmonary tuberculosis is limited by rapid emergence of resistant strains of the tubercle bacillus, but the drug is valuable for patients with streptomycin-resistant bacilli. In these cases, pyrazinamide may give temporary relief when surgery is necessary and in acute phases may effect a return to the chronic condition. In the treatment of 43 patients, Dr. R. L. Yeager and associates of Summit Park Sanatorium, Pomona, N. Y., observed rapid defervescence in all febrile patients. Reduction in both sputum volume and cough occur subsequently. Roentgenographic improvement was observed in 24% of the far advanced and 80% of the moderately advanced cases. Pyrazinamide therefore may be indicated in moderately advanced active cases with fever, cough, and expectoration, in spite of the limitations involved. The slight toxic reactions consist primarily of joint pains and, occasionally, eosinophilia.

Am. Rev. Tuberc. 65:523-534, 1952.



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Nutrition

Liver for Growth

A powdered liver preparation added to the adequate diets of 32 normal 2-year-old children is credited with causing an average 20% increase in height and 40% in weight in thirteen weeks compared with an approximately equal number of controls. The specially dried beef liver was incorporated in flavored bars of chocolate. Growth of rats was also greatly improved when the liver preparation was added to a supposedly complete stock diet. Dr. John Yudkin of the University of London believes that the gains accrued from some influence other than vitamin B_{12} or reproductive factor R, because a preparation of fish liver known to be potent in both substances was ineffective when added to the stock nutriment of rats. Moreover, each child's average daily amount of liver (1.2 gm.) supplied less than 1 μg. of vitamin B_{12} per gram.

Brit. M. J. 4773:1388-1389, 1952.

Hematology

Hemolyzed Blood Transfusion

Slight to moderate hemolysis is probably not a contraindication to use of stored blood in humans. Retention of nonprotein nitrogen does not occur in dogs given massive injections, most of this material in both hemolyzed whole blood and hemoglobin solutions being rapidly discarded in the urine. Dr. Worthington G. Schenk, Jr., and associates of the University of Buffalo and Edward J. Meyer Memorial Hospital, Buffalo, N. Y., found no effect on blood regeneration or reestablishment of a normal hematologic picture in anemic animals. Some evidence appeared that less iron than nitrogen is lost after administration of hemoglobin solutions, but the amounts of the 2 elements retained are about equal when hemolyzed whole blood is transfused.

Surgery 31:870-876, 1952.

Radioactivity

Effects of Colloidal Gold

Pathologic change similar to that seen in total body irradation occurs following intraperitoneal injection of radioactive colloidal gold. Dr. Edwin R. Fisher and associates of the Cleveland Clinic and the Frank E. Bunts Educational Institute, Cleveland, observed that administration of the agent in guinea pigs produced loss of weight and hair. Animals receiving 3 to 4 times the lethal dose died in three weeks. The outstanding morphologic changes were focal hepatic necrosis, hypoplasia of bone marrow, myeloid metaplasia of liver and spleen, and atrophy of the testes. Twice the lethal amount caused only hypoplasia and anakmesis of the testes and was demonstrated in animals sacrificed after forty-nine days. Although Geiger-Mueller counts were detectable on the thirty-third day following injection, significant activity lasted only twelve days. Largest concentrations are found in the liver, stomach, and spleen, although all other organs and tissues reveal a small degree of activity.

Am. J. M. Sc. 223:502-511, 1952.

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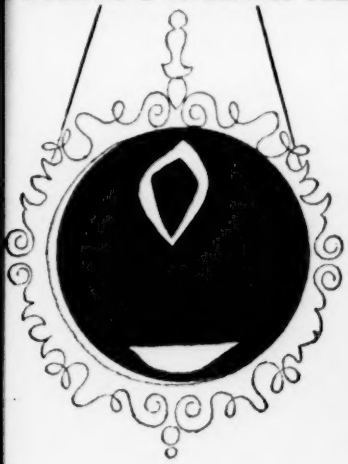

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of the common cold

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*Manson, M. H.; Wells, R. L.; Whitney, L. H., and Babcock, G., Jr.: Internat. Arch. Allergy & Applied Immunol. 1:265, 1951.

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Biochemistry

New Diuretics

Mercurial compounds of 3 new types are effective in promoting sodium and water excretion. The 3 formulas are 3-chloromercuri-2-methoxypropylurea, known as 1347Ex; 3-carboxymethylmercaptomercuri-2-methoxypropylurea, 1353Ex; and 3-(α-carboxyethylmercaptomercuri)-2-methoxypropylurea, 1431Ex. The most effective is 1347Ex. Drs. John H. Moyer and Carroll A. Handley of Baylor University, Houston, obtained satisfactory diuresis in treatment of 160 persons. Doses equaling 40 mg. of mercury were injected intramuscularly twice a week. The only untoward reactions were diarrhea in 1 instance and pain on injection in 2.

Federation Proc. 11:378, 1952.

Serology

Hemagglutination in Rheumatoid Arthritis

Sera from patients with rheumatoid arthritis contain increased amounts of a heat-stable factor which potentiates agglutination of partly sensitized red cells. Elevated agglutination titers are found in 85% of patients with objective manifestations of rheumatoid arthritis and in all patients with moderate or severe forms of the disease. Increased amounts of the heat-stable agglutinin occur in 13% of the sera from healthy persons and patients with various nonrheumatoid conditions. Drs. D. Hobson and R. H. Gorrill of St. Mary's Hospital Medical School, London, believe that the agglutinating factor may be identical to C 4, the heat-stable component of complement, since increased lytic titers are observed in cases with raised agglutinating titers. Agglutinating factor is not found in the three heat-susceptible components of complement. The specificity of the hemagglutination test is sufficient for distinguishing moderately active rheumatoid arthritis from other forms of polyarthritis of equal severity. Sensitivity of the test is dependent upon the degree of sensitization of the red cells and may be increased only with loss of specificity. Agglutination titer does not reflect the rapid change in clinical activity produced by cortisone, making the test unsuitable for evaluating short-term therapy.

Lancet 262:389-391, 1952.

Obstetrics

Healing in Pregnancy

Wound healing after laparotomy in rats is definitely retarded in pregnancy, possibly because of two factors. First, adrenal corticoids or other hormones may directly inhibit repair or direct raw materials chiefly to the uterus. Second, the enlarged womb may increase mechanical strain on the abdominal wall. From three to six days after operation, gestating and nonpregnant rats were compared by Drs. S. Arthur Localio and Jameson L. Chassin of New York University, New York City. The peritoneal cavity was inflated with air, and the pressure necessary to burst the incision was recorded. On each day, values were lower for the pregnant group.

Surgery 32:39-42, 1952.

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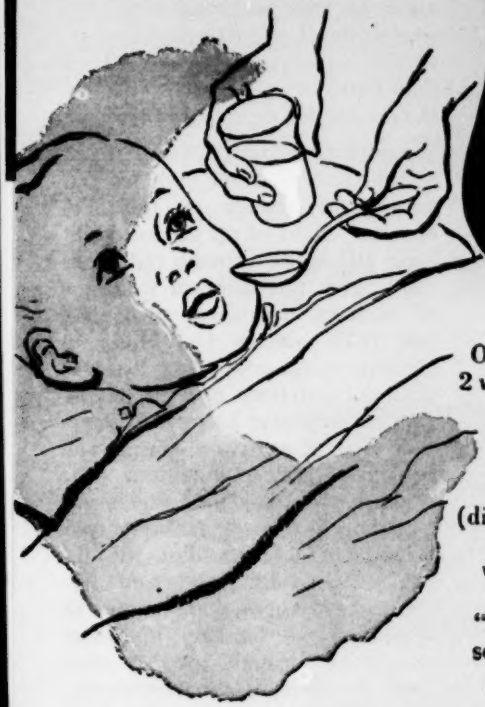

TYPICAL PATCH TEST

Over 400 infants and children from 2 weeks to 6 years of age acted as test subjects to check the incidence of sensitivity to orange juice. After 2 to 12 months' observation,* "no disturbance of bowel function (diarrhea or constipation) that could be attributed to the orange juice" was found. Also, the occurrence of regurgitation and rashes was "minimal". In the rare instances of sensitivity, care exercised by gentle reaming of juice (or the use of frozen concentrate) to avoid contamination with peel oil usually obviates the difficulty.

**J. Pediat. 39:325, 1951*

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Circulation

Heparin in Hemophilia

Heparinized plasma produces a greater and more lasting effect on the coagulation time of patients with hemophilia than does citrated plasma. Both in vitro and in vivo, small amounts of the anticoagulant cause an increased consumption of prothrombin as determined by the two-stage method. Drs. S. Van Creveld and M.M.P. Paulssen of the Municipal University of Amsterdam, The Netherlands, conclude after three years of use that heparinized plasma is more advantageous than citrated plasma for hemophiliac patients. Under some circumstances, the preparation may be preserved frozen or lyophile-dried.

Blood 7:710-720, 1952.

Respiratory Disease

Acetic Acid in Bronchiectasis

Patients with chronic pulmonary suppuration not helped by usual antimicrobial therapy may benefit from acetic acid aerosol therapy if respiratory tract cultures repeatedly reveal *Pseudomonas aeruginosa.* Acetic acid is almost specifically bactericidal for the organism. In a chronic case of purulent bronchiectasis in which *Ps. aeruginosa* predominated, the patient's condition was unresponsive to intensive antibiotic and sulfadiazine medication but was much improved by the acid therapy, reports Lt. Col. William W. Currence, M.C., U.S.A., of Fitzsimons Army Hospital, Denver. The patient, a child of 7, was given glacial acetic acid, 1 cc. of a 1:1,000 solution, as an aerosol three times a day in the hospital and, later, vaporized steam inhalations, 2 tbs. of vinegar to 1 qt. of water, for fifteen minutes three times a day at home. After a month of treatment, the patient's general condition was much improved and the cough had subsided. The gram-negative bacteria persisted in cultures.

Am. J. Dis. Child. 83:637-841, 1952.

Radiology

Preprotection and Radiation

Sodium nitrate, administered before a single dose of whole body irradiation, greatly reduces the mortality of mice. Many of the observed biologic effects of ionizing radiations result from the chemical reactivity of oxidants, considered to be OH and O_2H radicals and H_2O_2, in aqueous media containing dissolved oxygen. Catalases may be significant as a limiting factor in protection against radiation injury, and H_2O_2 may influence toxicity. The enzymes specifically bring about oxidation of primary and secondary alcohols. Decomposition of the catalase-H_2O_2 complex is not spontaneous but is greatly accelerated by sodium nitrate, ethanol, methanol, or sodium formate. As the structure of nitrous acid resembles that of a secondary alcohol, Dr. L. J. Cole and associates of the U.S. Naval Radiological Defense Laboratory, San Francisco, suggest that such a mechanism may be involved in the protective effect against x-irradiation observed with sodium nitrite pretreatment of mice.

Science 115:644-646, 1952.

"All would live long, but none would be old"

Benjamin Franklin

Fear of declining health all too frequently offsets the natural desire to live to a "ripe old age." Vital efficiency after fifty may be adversely influenced by improper adjustment of the body economy to the decline in sex hormone activity, as well as by nutritional inadequacy and emotional instability. "Mediatric" Capsules — combining steroids, nutritional supplements and a mild antidepressant — have been specially formulated to counter this problem by helping to prevent the premature onset of degenerative changes.

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Methyltestosterone	2.5 mg.
Vitamin C (ascorbic acid)	50.0 mg.
Thiamine HCl (B_1)	5.0 mg.
Vitamin B_{12} U.S.P. (crystalline)	1.5 mcg.
Folic acid	0.33 mg.
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Brewers' yeast (specially processed)	200.0 mg.
d Desoxyephedrine HCl	1.0 mg.

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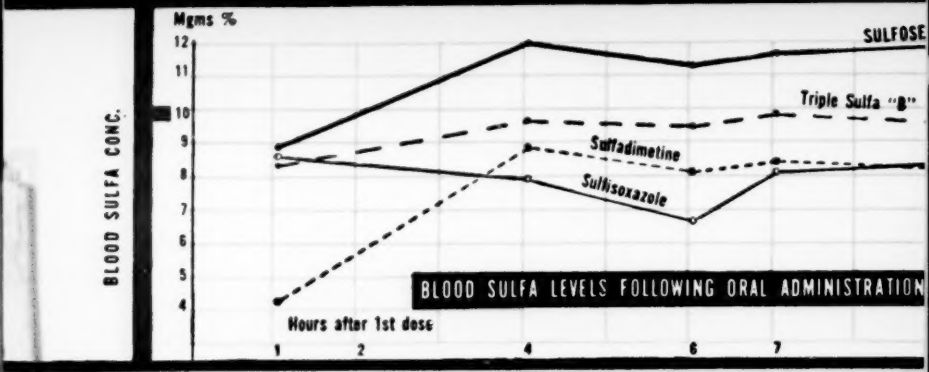

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—higher, more prolonged blood levels than any other sulfa preparation studied—single or combination[1]

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—superior antibacterial potency, because of potentiating action of sulfonamide mixture

2. *SULFOSE is better tolerated*

—higher solubility in *acid urine* than single sulfonamides (with acetyl derivatives), minimizes danger of renal blockage

—minimal tissue toxicity; blood cell damage, nausea, vomiting, etc., occur less frequently than with single sulfa therapy

3. *SULFOSE is a triple sulfa*

—danger of sensitization is minimal because each sulfa component is given in low dosage. Sensitization becomes more frequent when daily doses of a sulfa drug exceed 4 Gm.[2]

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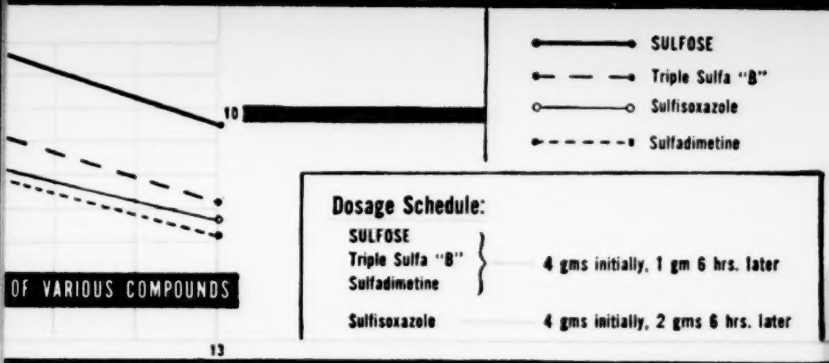

SULFOSE is more economical

—costs less per dose than modern single sulfas; also, fewer doses are needed

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1. Berkowitz, D.: To be published.
2. Lehr, D.: New York State J. Med. 50:361 (June 1) 1950.

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Geriatrics

QT Interval in Old Men

Recent evidence suggests that a prolonged QT interval may indicate serious heart disease such as rheumatic fever or myocardial infarction. Dr. Paul Hagen of the University of Sydney, Australia, has recorded the QT interval in a group of 52 healthy males between the ages of 65 and 90 years. The average K value in this group is 0.39, which is below the upper normal limit of 0.41 reported by Ashman for men. All except 6 of these older men were within the limits given for younger age groups; only 2 exceeded the limits by relatively large amounts.

M. J. Australia 1:407-408, 1952.

Surgery

Steroids and Wound Healing

Retardation of fibroplasia ascribed to cortisone may be a toxic systemic effect rather than a specific fibroblastic depressant action. In a study of the influence of steroids on wound healing, Dr. Frederic W. Taylor and associates of Veterans Administration and Indianapolis General hospitals concluded that cortisone, desoxycorticosterone, and estradiol do not alter the interval between tissue injury and beginning proliferation of fibroblasts or epithelium. Administration of DCA or estradiol, reported fibroplastic stimulants, did not affect the rate of healing.

Surgery 31:683-690, 1952.

Diagnosis

Spinal Sugar and Neoplasms

Low concentration or lack of sugar in the spinal fluid may be associated with meningeal neoplasms. Dr. Henry W. Dodge, Jr., and associates of the Mayo Clinic, Rochester, Minn., believe that the decreased sugar content, together with increased protein and cell count determined on lumbar puncture and signs of diffuse disease of the central nervous system without infection, should suggest neoplastic involvement of the meninges. Accelerated cellular metabolism and simple mechanical blocking are probably among the factors causing the sugar content abnormality. Extensive lymphatic spread is more commonly noted than large metastatic nodules in carcinomatosis of the meninges.

Proc. Staff Meet., Mayo Clin. 27:259-266, 1952.

Pharmacology

Salicylate Inhibition of Anaphylaxis

The value of salicylate therapy in allergic conditions is probably due to inhibition of histamine release. Sensitized guinea pig lungs perfused with Tyrode's solution release histamine when injected with egg albumin. This release of histamine is presumed to be the stimulus to anaphylaxis in the intact animal. Dr. E. R. Trethewie of the University of Melbourne, Australia, finds that addition of sodium salicylate or acetylsalicylic acid to the perfusing medium abolishes histamine release after albumin injection. Sodium salicylate is more effective than acetylsalicylic acid on a weight basis. These findings elucidate the mechanism of salicylate therapy in rheumatic fever. The pyrexia of rheumatic fever is believed due to an allergic reaction to streptococcal infection. Salicylate concentrations of 35 mg. per 100 cc. of blood are effective in human rheumatic fever. Histamine release from guinea pig lung preparations is inhibited at sodium salicylate concentrations between 25 and 50 mg. per 100 cc. of perfusing fluid. Salicylate therapy seems to have no effect on the cardiac fibrosis of rheumatic fever.

Australian J. Exper. Biol. & M. Sc. 29:443-450, 1951.

Vasodilator

Drug for Angina Pectoris

Dioxyline phosphate, a synthetic chemical structurally related to but less toxic than papaverine, merits trial as a vasodilator in angina pectoris. Dr. Ralph C. Scott and associates of Cincinnati General Hospital and the University of Cincinnati report that of 12 patients receiving the drug, 5 had fewer pains and 2 showed improvement in the exercise tolerance test. Usual dosage was 200 mg. four times daily. Side effects of nausea, weakness, or gaseous distention experienced by 5 of the patients were not severe enough to force discontinuance of the drug. The compound, Paveril Phosphate, chemically is 6, 7-dimethoxy-7-(4'-ethoxy-3'-methoxybenzyl)-3-methyl-isoquinoline.

Circulation 6:125-130, 1952.

Use the CORRECT *Approach*

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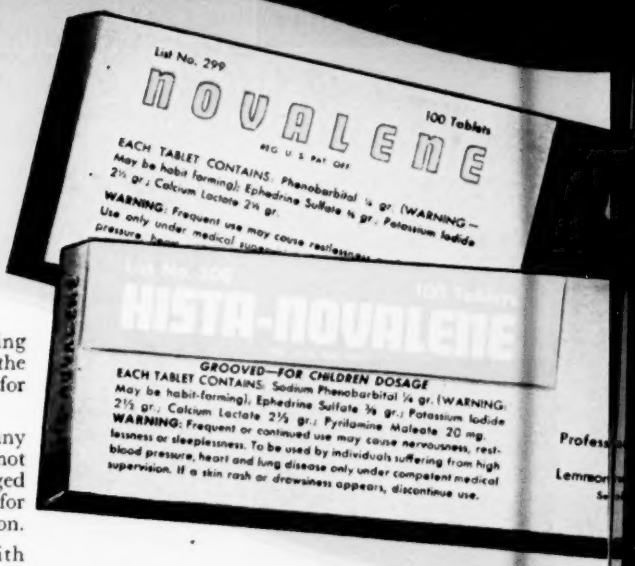

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NOVALENE, with its many *active* ingredients provides not only rapid relief with prolonged effect, but is also remarkable for its valuable prophylactic action.

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	Ephedrine Sulfate	⅛ gr.
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	Calcium Lactate	2½ gr.
	Pyrilamine Maleate	20 mg.

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MOL-IRON E.M.F.

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MOL-IRON ..... **198 mg.**
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VITAMIN B_{12} CONCENTRATE ..... **10 mcg.**
(ACTIVITY EQUIVALENT)

GASTRIC SUBSTANCE ..... **250 mg.**

DESICCATED LIVER ..... **100 mg.**

FOLIC ACID ..... **0.85 mg.**

ASCORBIC ACID ..... **50 mg.**

RECOMMENDED THERAPEUTIC DOSE: 2 CAPSULES T. I. D.

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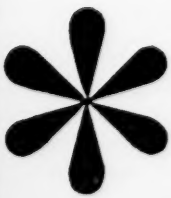


To date 12 reports on Mol-Iron have appeared in medical literature; all concur in the conclusion that Mol-Iron is more effective and better tolerated than unmodified ferrous sulfate and other iron salts. White Laboratories, Inc., Pharmaceutical Manufacturers, Kenilworth, N. J.

Surgery

Pancreatin after Gastrectomy

Sound physiologic reasons exist for expecting oral administration of pancreatin to improve fat and nitrogen assimilation following total gastrectomy. Dr. Tilden C. Everson of the University of Illinois, Chicago, reports that the substance appreciably reduced fecal nitrogen loss in 12 gastrectomized dogs but did not restore the excretion to normal when added to the daily diet. Pancreatin, as effective in 10-gm. as in 30-gm. doses, produced no significant difference in the average percentage fecal fat loss.

Ann. Surg. 135:406-410, 1952.

Gastroenterology

Intestinal Sterilization

Combinations of nonabsorbable microbiotics suppress the intestinal flora safely and without irritation to the gastrointestinal tract. Sensitization of the patient to the drug or development of resistant bacterial strains does not occur. Drs. E. Jawetz and H. R. Bierman of the University of California and National Institutes of Health, San Francisco, administered mixtures of 400 to 600 mg. of polymyxin B sulfate and either 1,000 mg. of neomycin or 120,000 units of bacitracin daily to 4 persons with ulcerative disease of the bowel and 10 with various neoplasms but no manifest gastrointestinal disturbances. Coliforms and enterococci were entirely eliminated. Rarely, *Proteus* and *Pseudomonas* appeared in the feces; occasionally, yeasts, staphylococci, and chromobacteria. Absorption of neomycin was observed only after much higher dosage.

Gastroenterology 21:139-147, 1952.

Obstetrics

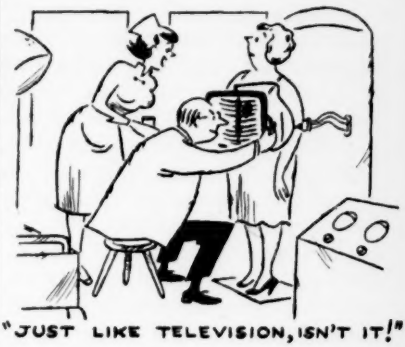
Pregnancy Tests with Toads

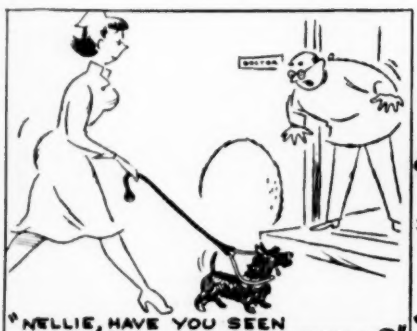
Common male garden toads are more reliable and easily handled than frogs in pregnancy tests. A dozen animals can be used for 72 or more determinations at an average cost of 6 cents per test. About 98% accuracy is obtained, report Drs. Joseph B. Forman and Richard D. Floyd of Yale University, New Haven, Conn. Toads can be kept in an office refrigerator without feeding or other care for ten or twelve weeks and are then replaced. From 2.5 to 3 cc. of the subject's urine is injected with a 22-gauge needle into the dorsal lymph sac, just under the skin in the caudad region of the back. At intervals of two and three hours after injection and on the following day, the toad's urine is withdrawn from the cloaca with a small glass pipet. The sample is placed on a glass slide and observed microscopically under low power with reduced illumination. A positive reaction produces many hairlike motile spermatozoa.

Am. J. Obst. & Gynec. 63:1352-1355, 1952.

Nellie Nifty, R.N.

by kaz



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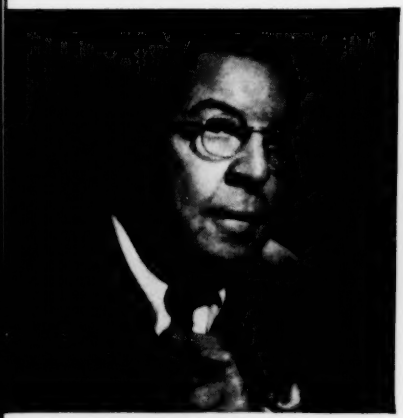

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(1) Soskin, S., and Levine, R.: Carbohydrate Metabolism; Correlation of Physiological, Biochemical, and Clinical Aspects. Page 10, 1946, U. of Chicago Press.

(2) Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice. 4th Ed. Pp. 553-554, 1945, Williams & Wilkins Co.

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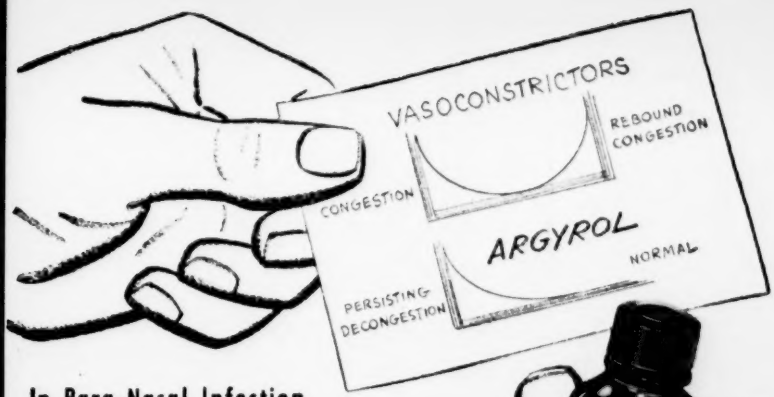
"Read the letters on the chart, please."



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